SEPTEMBER 1950

ARMY INFORMATION DIGEST

Meeting the Military Manpower Need

Aviation Medicine Looks Ahead

Housing In Occupied Germany

Coast Guard In Peace and War

Tactical Use of Guided Missiles

The Service Academy Board Reports

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OCCUPIED JAPAN SINCE VJ DAY

The Record of the Past Five Years

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ARMY
INFORMATION
DIGEST

The ARMY INFORMATION DIGEST, an official Department of the Army publication, is published monthly under the supervision of the Commandant, Armed Forces Information School, Carlisle Barracks, Pennsylvania, on behalf of the Chief of Information, Department of the Army. The DIGEST provides timely and authoritative information on the policies, plans and operations of the Department of Defense, the Department of the Army, the other services and their reserve components. Material in The DIGEST may be reprinted with credit to The DIGEST and to the author.

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FORWARD STEPS

Chronicling the first steps in the marshaling of our military manpower, The DIGEST this month summarizes the principal personnel actions taken by the President, the Congress and the Defense Department during the period from the outbreak in Korea to 10 August.

ACADEMIES HIGHLIGHTED

Recommendation for the establishment of an Air Force Academy—one of the measures advocated by the Service Academy Board—has been approved by the Secretary of Defense. Other approved recommendations are described in "The Service Academy Board Recommends." In another article, a personal evaluation of the Military Academy is presented by a recent graduate who resigned his commission to enter West Point.

COAST GUARD IN REVIEW

The early efforts of Alexander Hamilton to intercept contraband smugglers and bring badly needed revenue into the treasury of the young Republic has paid dividends through the years. From the Revenue Marine of Hamilton's day, the Coast Guard has emerged as an indispensable element in the Nation's security. The diversified activities of the Coast Guard in peace and war are described in the article appearing on page 37.

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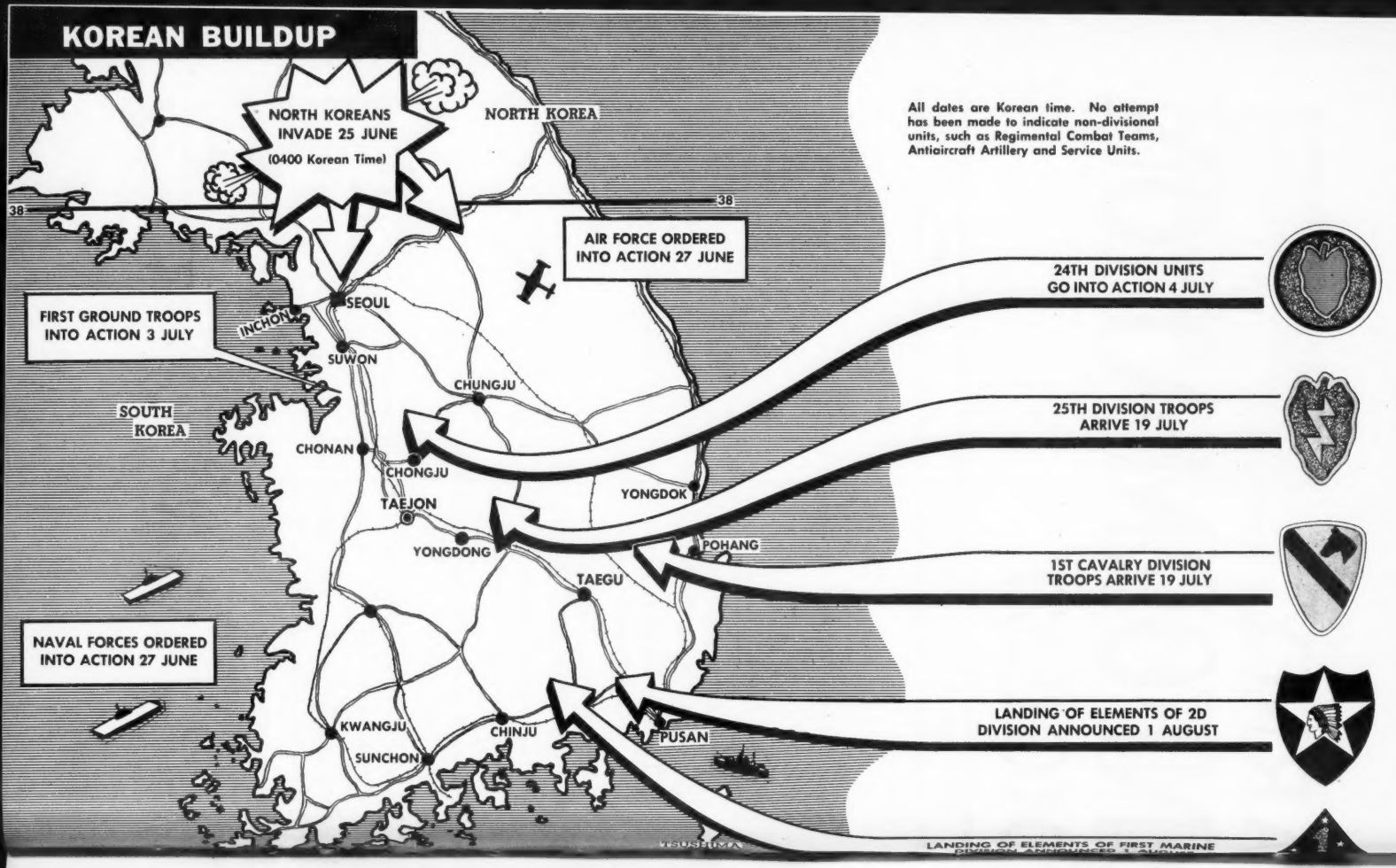
KOREAN BUILDUP
NORTH KOREANS INVADE 25 JUNE
(0400 Korean Time)
NORTH KOREA
38
38
AIR FORCE ORDERED INTO ACTION 27 JUNE
FIRST GROUND TROOPS INTO ACTION 3 JULY
INCHON
SEOUL
SUWON
CHUNGJU
SOUTH KOREA
CHONAN
CHONGJU
TAEJON
YONGDOK
YONGDONG
POHANG
TAEGU
NAVAL FORCES ORDERED INTO ACTION 27 JUNE
KWANGJU
CHINJU
PUSAN
SUNCHON
TSUSHIMA
All dates are Korean time. No attempt has been made to indicate non-divisional units, such as Regimental Combat Teams, Antiaircraft Artillery and Service Units.
24TH DIVISION UNITS GO INTO ACTION 4 JULY
25TH DIVISION TROOPS ARRIVE 19 JULY
1ST CAVALRY DIVISION TROOPS ARRIVE 19 JULY
LANDING OF ELEMENTS OF 2D DIVISION ANNOUNCED 1 AUGUST
LANDING OF ELEMENTS OF FIRST MARINE DIVISION ANNOUNCED 1 AUGUST

A Staff Article

BUILDING OUR MILITARY MANPOWER

WITH gathering momentum, the Nation is moving to muster its resources of men, money and materiel to contain and hurl back the Communist aggressors in Korea or wherever else the Red invaders appear. Even as United States forces fought a bitter delaying action down the Korean peninsula, buying time with space and lives, tenaciously contesting each village and yielding slowly to the swarming Reds, the Nation through its President, the Congress and Department of Defense moved swiftly and resolutely to hasten the inexorable day of retribution. Action to increase our military manpower was a foremost consideration.

"The world situation," the President declared, "requires that we increase substantially the size and materiel support of our Armed Forces, over and above the increases which are needed in Korea . . . . To meet the increased requirements for military manpower, I have authorized the Secretary of Defense to exceed the budgeted strength of military personnel for the Army, the Navy and the Air Force, and to use the Selective Service System to such extent as may be required in order to obtain the increased strength we must have. I have also authorized the Secretary of Defense to meet the need for military manpower by calling into active Federal service as many National Guard units and as many units and individuals of the Reserve forces as may be required."

On 25 June when the Korean Communists unleashed a full-scale war against their neighbors to the south, the United States Armed Forces numbered less than 1,500,000.* By Presidential directive, immediate expansion of these forces beyond their Fiscal Year 1951 budgeted strengths was ordered—an expansion to be accomplished by volunteer enlistments, Selective Service and the calling of units of the National Guard and units and individuals of the Reserve to active duty.

In the first seven weeks after the outbreak in Korea, these measures were taken to augment Armed Forces strength:

* Army, approximately 591,000; Navy, 380,600; Marine Corps, 74,200; Air Force, 412,000.

SELECTIVE SERVICE: The Selective Service Act of 1948 (Public Law 759—80th Congress) as amended, authorized the President to induct personnel and reserve component units for military duty up to 21 months. This authority, delegated by the President to the Secretary of Defense, was immediately used to call up an initial increment of 20,000 selectees for Army duty. Later another 80,000 were ordered to report for Army service in September and October. Camps and training facilities were readied for the influx of selectees (see below).

EXTENSION OF ENLISTMENTS AND TOURS OF DUTY: Moving speedily through the 81st Congress, Public Law 624 empowered the President to retain in service for one year beyond their normal enlistment periods all Armed Forces personnel whose enlistments expire on or after 27 July 1950. The Department of Defense meanwhile announced that no resignations by officers or warrant officers would be accepted, including non-Regular officers on extended active duty, regard-

U. S. Army Photograph

Major General Lewis B. Hershey, Director of the Selective Service System, also administered manpower mobilization under the Selective Service Acts of 1940 and 1948.

less of category commitments. Army and oversea theater commanders were given authority to retain non-Regular officers for an indefinite period beyond their normal separation dates if they do not volunteer to remain on extended active duty. Such officers will be placed in a new category with an indefinite expiration date. Over-age officers also will be retained for an indefinite period, but none beyond the age of 60. Additionally, the normal rotation of Army personnel to Stateside upon completion of oversea tours was deferred for six months in all oversea commands except in the Far East Command where rotation was delayed indefinitely.

ENLISTMENT QUALIFICATIONS MODIFIED: To increase the number of eligibles, the minimum mental test qualification scores for some enlistments have been lowered. The minimum enlistment period of three years in the Army has been scaled down to 21 months for men between 19 and 25. The Army's peacetime enlisted career guidance personnel promotion and assignment procedures have been suspended. Promotion to fill local position vacancies under major command promotion ceilings has been reopened without time-in-grade and time-in-service requirements.

NATIONAL GUARD UNITS CALLED INTO SERVICE: The Selective Service Act provides that whenever units and organizations are needed "in excess of the Regular components, the National Guard of the United States . . . together with such units of the Reserve components as are necessary for a balanced force, shall be ordered into Federal service." With many National Guard units already in summer training preparing for their M-Day missions, the Korean crisis found the Guard strength at 369,489 officers and enlisted men. This total included 324,761 in 4855 Federally recognized army units and 44,728 in 514 air units. Organization of 95 per cent of the Guard's combat units has been completed, including 20 regimental combat teams, 23 Infantry divisions*, 2 Armored divisions, 575 non-divisional Antiaircraft Artillery units, 109 Armored Cavalry units, 72 fighter squadrons and 12 bomber squadrons.

Initially, a scattering of non-divisional specialist units was called into service, their members given 30 days to wind up

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* An additional two Infantry divisions lack only four units to complete their organization. This would give the Guard 27 divisions.—*Ed.*

Guard Divisions On Duty

The 28th Infantry Division, from Pennsylvania, patterned its patch after the state seal. The Keystoners fought in the Meuse-Argonne, Champagne and other engagements of World War I. The Division returned to France 26 years later for the invasion of the Continent in World War II. Living up to its motto, "Roll On," the 28th participated in the campaigns of Normandy, Northern France, Rhineland, Ardennes-Alsace and Central Europe. From the fury of its assaults it became known as the "Bloody Bucket" outfit. Commanding General of the 28th is Major General Daniel B. Strickler.

KEYSTONE DIVISION

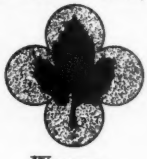
The 40th Infantry Division, a southern California outfit, is built around Guard units that trace their history back to 1874. As a division it dates to 1917 when it included units from California, Utah, Arizona, Colorado and New Mexico. The 40th as a unit saw no combat service in World War I but some of its members fought with other divisions in St. Mihiel and the Argonne. Following World War I it was reassembled as a National Guard division. Inducted in 1941, the Division saw action in the Philippines during World War II. Commanding General of the 40th is Major General Daniel H. Hudelson.

SUNBURST DIVISION

The 45th Infantry Division's Thunderbird, an old Indian design, was a symbol of terror to the German armies in World War II. It was worn through eight campaigns and three amphibious landings—Sicily, Salerno and Southern France. The 45th spearheaded the drive for Berlin and climaxed long months of combat by marching into Munich. In World War II, the Division had included troops from Arizona, Colorado, New Mexico and Oklahoma. During the postwar period, however, its troops have been drawn entirely from Oklahoma. Commanding the division is Major General James C. Styron.

THUNDERBIRD DIVISION

The 43d Infantry Division is comprised of Guardsmen from Rhode Island, Vermont and Connecticut, many of whom wear four campaign stars on their Asiatic ribbon. Organized in 1925, the Division was called to service in 1941. The New Englanders first went into combat in 1943 on Guadalcanal. Subsequent campaigns took them over the beaches and through the jungles of the Russell Islands, Solomons, New Georgia, Rendova, New Guinea and the Philippines. The Division served in Japan as part of the occupation forces. Major General Kenneth F. Cramer, Chief, National Guard Bureau, commands.



WINGED VICTORY

their personal affairs. Early in August four National Guard divisions and two Regimental Combat Teams were summoned into Federal service. The units affected, their home states, and the training posts to which they are scheduled to report in September are:

Unit	*State of Origin*	*Training Station*
28th Infantry Division	Pennsylvania	Camp Atterbury, Indiana
40th Infantry Division	California	Camp Cooke, California
43d Infantry Division	Vermont, Connecticut and Rhode Island	Camp Pickett, Virginia
45th Infantry Division	Oklahoma	Camp Polk, Louisiana
196th RCT	South Dakota	Camp Carson, Colorado
278th RCT	Tennessee	Fort Devens, Massachusetts

(For security reasons non-divisional units may not be listed.)

RESERVISTS RECALLED TO DUTY: In a joint announcement the Army and the Air Force outlined the policy governing the recall of Reserve personnel: "Return of officers to active duty, whether on a voluntary or involuntary basis, will be in Reserve grades now held and in immediately usable skills. Reserve officers of field grade now serving on extended active duty in an AUS or AFUS grade lower than their Reserve grade will be considered for promotion prior to any general recall of Reserve officers of that grade to extended active duty. Certain specialists may be required in the field grades. In addition, all officers assigned to units called to active duty will be ordered in the grade held. With the recall of Reserve officers of company grade, their contemporaries, many of whom are now serving on active duty in a lower grade, progressively will be considered for promotion. Enlisted Reservists will be recalled in the numbers and skills required, for a year or more, and will be recalled in the Reserve grade now held."

In implementation of this announced policy, Army selection boards have been convened to consider for temporary promotion to all grades from captain through colonel Regular officers in order of permanent seniority and non-Regular officers now on extended active duty in order of temporary rank.

Meanwhile a voluntary recall program for officers in the grades of lieutenant and captain who wish to volunteer on an individual basis was placed into effect by the Department of the Army. The primary requirement is for officers in the Medical and Dental Corps, Corps of Engineers and Infantry. Also being accepted are Reserve officers in the Medical Service

Corps, Chaplains, Ordnance, Signal Corps, Staff (Branch Immaterial), Finance, Chemical, Armored, Field Artillery, Coast Artillery, Army Nurse Corps and Women's Medical Specialist Corps. Members of the Active, Inactive or Honorary Reserve in these arms and services may be recalled in the Reserve grade now held and will be required to remain on active duty for periods of one, two or three years. Current age-in-grade and physical requirements must be met by those who volunteer. In the combat arms, lieutenants must be able to complete one, two or three years of service before reaching age 35, and captains before reaching 41. In the administrative and technical services, lieutenants may reach age 41, captains 45.

In addition the Army recalled on an involuntary basis 7862 male Reserve captains and lieutenants who were not assigned to units of the Organized Reserve Corps. These officers from 16 arms and services will be on active duty by early October. Some 1582 male Reserve officers of the Medical, Dental, Veterinary and Medical Service Corps also are being recalled involuntarily.

Early in August the Army directed the six Continental Army Commanders to dip into the pool of approximately 185,000 male enlisted Reservists who are not members of Organized Reserve Corps units and to call 62,000 of them to active duty during September and October. These men will be used primarily to bring to full strength National Guard and Organized Reserve units ordered to active duty and for other duties essential to Army expansion.

These Reservists will be called with or without their consent from both the Volunteer and Inactive Reserve. Selection will be made initially from those men between 19 and 25. Priority will be based on the number of dependents, those with no dependents being called up first.

The Navy, while building its strength by voluntary enlistments, initially called up some Organized Naval Air Reserve units. Further recalls of Naval Reservists would be made as additional ships and aircraft carriers are brought into service.

To bring its First and Second Marine Divisions to full strength, all Organized Reserve ground units of the Marine Corps have been ordered to active duty. Two Organized Reserve Marine Air Squadrons also have been called up in order to have nine squadrons in each of two Marine Air Wings, while additional Organized Reserve Marine Air units are in the process of being called. In addition, the Marine Corps

will mobilize its Volnuteer Reserve—those Reservists not members of organized units. Initially, approximately 50,000 officers and enlisted men will be called to extended active duty by 31 October.

In the Air Force, approximately 50,000 Reservists—numbering about 8000 officers mostly in the grades of captain and below, and 42,000 enlisted personnel—are being recalled both on a voluntary and involuntary basis and will be phased into the Air Force by early fall.

SERVICE STRENGTH CEILINGS RAISED: When the President signed Public Law 655—81st Congress on 3 August, the Congress suspended for an indefinite period the statutory limitation placing a 2,005,882 ceiling on the strength of the Armed Forces. The Armed Forces thus will be permitted to expand beyond their previously authorized strengths of 837,000 for the Army, 666,882 for the Navy and 502,000 for the Air Force.

TRAINING FACILITIES EXPANDED: To house and train the influx of volunteers and selectees, the Department of the Army ordered the activation of standby camps as replacement training centers. These include:

Fort Jackson, South Carolina	Camp Rucker, Alabama
Camp Breckinridge, Kentucky	Camp Stewart, Georgia
Camp Chaffee, Arkansas	Camp Roberts, California
Fort Leonard Wood, Missouri	Camp McCoy, Wisconsin

Camp Edwards, Massachusetts

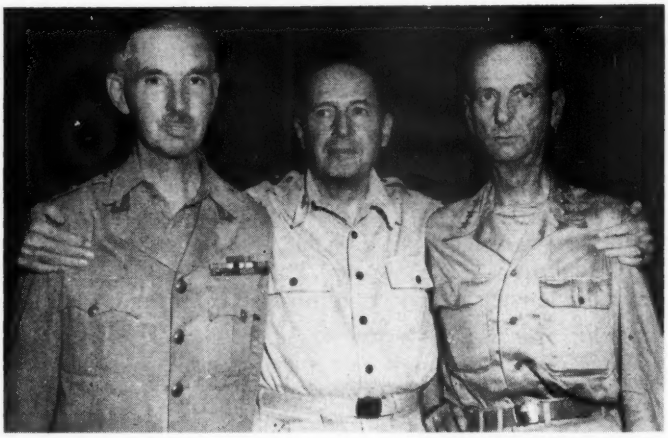
Basic training will also be given at the following training centers already operative and staffed by training divisions:

Fort Ord, California	4th Infantry Division
Fort Dix, New Jersey	9th Infantry Division
Fort Knox, Kentucky	3d Armored Division
Fort Riley, Kansas	10th Infantry Division

At the training centers the new arrivals will receive basic training in first aid and personal hygiene, physical conditioning, field tactics, signal communications, intelligence training, map and aerial photoreading, maintenance and field firing of weapons, and vehicle maintenance and operation. As part of their training, wartime-type courses in infiltration tactics, city and village fighting, guerrilla warfare and close combat are being introduced by Army Field Forces. Live ammunition will be used on the infiltration course to help the trainees adapt themselves to actual battlefield conditions. For recruits of proved leadership ability, the path of advancement will be open. Additional Officer Candidate School classes are expected to raise the annual output of officers.

Occupied Japan After Five Years

A Special Section



U. S. Army Photograph

POSTWAR REUNION: General of the Army Douglas MacArthur greets two comrades-in-arms who staged a last-ditch defense during the high tide of the Japanese advance. General A. E. Percival, British Army (left) was commander of Singapore when it fell. General Jonathan M. Wainwright (right) carried on the final defense of Bataan and Corregidor.

★ ★ ★ ★ ★

With the islands of Japan assuming a pivotal importance as a bastion against the onslaughts of Communist aggression in the Far East, the achievements of the past five years of occupation are invested with new significance. For Japan today is more than just an example of the progress wrought by democratic processes. It is one of the vital outlying bases upon which the security of our Nation rests. In the following articles, prepared expressly for the ARMY INFORMATION DIGEST, General Jonathan Wainwright recalls his liberation from a Japanese prison camp. In the second article, the Public Information Officer on General MacArthur's staff reviews the far-reaching changes involved in the democratization of Japan.

FIVE YEARS AGO

By

GENERAL JONATHAN M. WAINWRIGHT

AT THE time that the Japanese Empire decided to surrender, 14 August 1945, I was in a Japanese prison camp in a place called Seian in north central Manchuria. We had not then heard of the Japanese willingness to capitulate and it was not until 19 August at morning roll call, "reveille" to us, that the Japanese officer of the prison guard informed us, "By the order of the Emperor, the war has now been amicably terminated." From then on we were treated very well—no more labor, no more reveille, no more retreat, but more food.

On the same day an American officer of the 11th Airborne Division, Major Lamar, came into our camp and informed us that he had landed by parachute at Mukden and had been looking for us. He was to go back by plane to Chungking and report to the Headquarters of American forces in China, commanded by Lieutenant General Albert C. Wedemeyer. He said he would return by train to get us. Five days passed and Major Lamar did not reappear, but on 24 August a Russian detachment of perhaps 35 or 40 men, commanded by a lieutenant colonel, came into our camp at Seian. All were in American jeeps which they had captured in Germany. They disarmed the Japanese guards. I informed the Japanese commander that the other Americans and I were no longer prisoners of war and that we were leaving with the Russians. I was told, "All right. Go ahead. Get your transportation and go." The Russian colonel said he would take us out if we would get transportation.

I still had some American money—money which the Japanese did not know I had; otherwise I could not have kept it—and I managed to hire a bus and a truck. These took us for about 150 miles and then broke down. We eventually arrived on the line of the main East Siberian Railroad and after various delays and vicissitudes, we finally reached Mukden.

GENERAL JONATHAN M. WAINWRIGHT, U. S. Army, Retired, commanded American troops during the final action on Bataan and Corregidor in World War II.

U. S. Army Photograph

General Jonathan M. Wainwright, U. S. Army, with Lieutenant General A. E. Percival, British Army, stand by as General of the Army Douglas MacArthur signs the Japanese surrender document aboard the *USS Missouri*, 2 September 1945.

In that city were a large number of American, British and Dutch prisoners of war and two American airplanes which General Wedemeyer had sent from Chungking. I inquired how it was possible to get the planes there and was advised that a signal officer, Colonel T. T. Teague, formerly with me in the Philippines, had reconditioned a radio which had been dropped off the plane that Major Lamar came in on. Colonel Teague, an expert radio officer, fixed this radio with anything he could get hold of. He then communicated with Headquarters at Chungking and had the planes sent. These took out about 36 of us.

When I again saw Major Lamar in Mukden, he told me that General MacArthur extended to me an invitation to be with him on board the battleship *Missouri* in Tokyo Bay to witness the unconditional surrender of the Japanese Empire. He also

invited the members of my staff who still lived and who had been with me when I was forced to surrender in the Philippines. This act to me will always illustrate the kindness and the greatness of heart of Douglas MacArthur.

We flew down to Chungking, thence to Manila for a few hours and then to Yokohama, where I reported my return to the United States Army to General MacArthur.

On 2 September I had the honor of standing on the deck of the *Missouri* when the representatives of the Japanese government signed the surrender instrument. I count that one of the highlights of my military career.

And now, as I write these lines, we are again embroiled in war, in Korea. Douglas MacArthur has become the Supreme Commander of the United Nations Forces. Certainly no finer could be chosen. I am in every way confident that he will handle the present situation and that before long the North Koreans will be thrown back to the 38th parallel of north latitude.

U. S. Army Photograph

General Jonathan M. Wainright regains the sword he surrendered at Corregidor.

The Closing Days in the War Agai

(Dates given are local

JULY

16 Task Force 37, the fast carrier task force of the British Pacific Fleet, joined Admiral Halsey's Third Fleet.

17 The Big Three Conference opened in Potsdam and President Truman was chosen to preside. Nations represented were the United States, Great Britain and Russia.
U. S. carrier planes bombarded the engineering works and arms factory at Hitachi, 50 miles north of Tokyo.

18 Carrier aircraft struck Yokosuka Naval Base and the battleship *Nagato*.

24 Fighter sweep carried out against airfields between northern Kyushu and Nagoya; Kure Naval Base struck with bombs, rockets and torpedoes.

26 In a joint proclamation issued in Potsdam by President Truman and Prime Minister Churchill, with the concurrence of Generalissimo Chiang Kai-shek, the Japanese people were asked to surrender unconditionally or face virtual annihilation.

28 Third Fleet resumed attack on Kure Naval Base, finishing off the Japanese Fleet.

29 Japan rejected a surrender demand issued by the United States, Great Britain and China.
Surface vessels bombarded Hamamatsu.

30 Carrier strike made on Tokyo and Nagoya; destroyer bombardment on Shimizu.

31 Tenth Army and all other forces in Ryukyus (except Strategic Air Force) placed under command of General MacArthur.

AUGUST

2 Far East Air Force bombed Nagasaki.

3 The Twentieth Air Force established a complete blockade of shipping in Japan.

6 United States Air Force dropped first atomic bomb on Hiroshima.

9 United States Air Force dropped an atomic bomb on Nagasaki.
President Truman warned the Japanese people that they would be obliterated with the atomic bomb unless they surrendered unconditionally.
Russia declared war on Japan.

10 The Japanese government offered to surrender under the terms of the Potsdam Declaration with the provision that Emperor Hirohito would be left on the throne.
Further carrier strikes made against Honshu airfields.

11 President Truman replied that Emperor Hirohito would be permitted to remain on the throne temporarily, subject to the command of the Allied occupation forces.

13 Carrier aircraft attacked Tokyo area.

14 Emperor Hirohito issued an Imperial Rescript to bring the war to an end.
Unconditional surrender of Japan formally announced by President Truman.

the area concerned.)

AUGUST

15 General MacArthur assumed command as the Supreme Commander for the Allied Powers (SCAP) and initiated action directly with the Japanese government for cessation of hostilities.

16 First message direct from Japan received at General Headquarters, Supreme Commander for the Allied Powers, stating that the Japanese Emperor had issued an Imperial Order directing his forces to cease hostilities.

19 Japanese emissaries arrived at Manila from Tokyo and received SCAP requirements for surrender procedures.
General Jonathan Wainwright, one of the heroes of Corregidor, was found in a Japanese prisoner of war camp in Manchuria and liberated.

20 Japanese emissaries departed from Manila for Tokyo.
Eighth Army Area Command passed to control of Army Forces, West Pacific.

22 XXIV Corps relieved of the responsibility of ground defenses in the Ryukyus by Army Service Command I.

23 Russian airborne forces occupied the ports of Dairen and Port Arthur in Manchuria.

24 Moscow announced completion of the conquest of Manchuria and southern Sakhalin Island.

26 Eighth Army Command Post closed at Leyte and opened at Okinawa.

28 Eighth Army advance party landed at Atsugi airdrome.

30 General MacArthur arrived by plane at Atsugi airdrome.
Far East Air Force, Advance Echelon, landed 11th Airborne Division at Atsugi.
Eighth Army Command Post closed at Okinawa and opened at Yokohama. Lieutenant General Robert L. Eichelberger assumed command of Tokyo area.
4th Marine Regiment of 6th U. S. Marine Division landed at Yokosuka simultaneously with Eighth Army arrival at Atsugi.

31 511th Parachute Infantry and 188th Glider Regiment advanced into Yokohama. Patrols made contact with 4th Marine Regiment at Yokosuka.

SEPTEMBER

2 Japan surrendered formally to the Allies aboard the United States battleship *USS Missouri*.
Territory of Southwest Pacific area south of the Philippines transferred to British Empire control. The following Southwest Pacific commands abolished: Allied Land Forces; Allied Naval Forces; Allied Air Forces.
Special Staff Sections of SCAP activated: Economic and Scientific; Civil Information and Education; Natural Resources; Public Health and Welfare; Government; Legal; Civil Communications; Statistical and Reports; Civil Intelligence.

U. S. Army Photograph

Personal liberties in the new Japan are symbolized by this Japanese family. The wife walks beside her husband instead of behind.

JAPAN SINCE VJ DAY

By

COLONEL M. P. ECHOLS

RESPONSIBILITY for repelling the North Korean Communist hordes who shattered a Sunday morning's calm on 25 June by unprovoked invasion of South Korea is the latest task added to the heavy burden carried by the Far East Command. As Commanding General, Far East Command, and as Supreme Commander for the Allied Powers, General Douglas MacArthur flew to Korea early in the conflict to observe the situation personally. On 8 July he was named Supreme Commander of United Nations Forces in Korea.

Just five years previously, after leading his forces to a military victory, General MacArthur began the direction of an occupation effort that has achieved a transformation without equal in so short a time. Today, despite the renewal of armed conflict in Asia, his occupation forces—both military and civilian—are continuing rehabilitation efforts, paving the way for an ultimate peace treaty and for the admission of Japan to a family of nations dedicated to the goal of world peace.

Regardless of the flareup of armed aggression, the occupation of Japan may be summed up on VJ day this year as a symbol of the progress possible through democratic processes.

In the new Japan, women vote, workers join free labor unions, farmers may own the land they till so painstakingly, boys and girls attend the same schools and worshipers are free to attend the churches of their choice. Such activities so commonplace to Americans were undreamed of by the average Japanese when his country was first occupied.

Under Japan's pre-surrender government the individual had no political liberty, no safeguards against arbitrary arrest or imprisonment, no protection against search of his home and little if any recourse in the event of seizure of his possessions. In short, respect for the dignity of the human being was not a part of official thinking in pre-occupation Japan.

COLONEL M. P. ECHOLS, Artillery, is Public Information Officer, General Headquarters, Supreme Commander for the Allied Powers and Far East Command.

The Supreme Commander for the Allied Powers toppled this feudalistic structure through a series of directives that laid the foundation for a new democratic society. In a precedent-shattering first year, the Japanese military machine was demobilized and disarmed, the sovereignty of the Emperor was transferred to the people, universal suffrage was enacted, a militaristic police system was reformed, freedom was given to political parties, labor was granted the right to organize and bargain collectively and religion was eliminated as an instrument of the state.

Major reforms continued in the second year. A new constitution was adopted making democratic rights the fundamental law of the land. The decentralization of Japan's national government was accomplished by popular election of local and prefectural (state) officials and granting local government wide powers and responsibilities. The civil code was revised in order to free women from virtual bondage by granting them social and economic equality. A land reform program was instituted to break up large land holdings and create a new class of small landowners from among the former tenants. Private trade with foreign countries was resumed on a limited basis as the first step toward restoration of normal economic life.

Significant in the reformation was the manner in which it was brought about. Japan had no direct military government such as in Germany or Korea. Instead, with the broad outlines for reorientation established, the Japanese were given the responsibilities for carrying out policies laid down in the Supreme Commander's directives. They were allowed to conduct their own affairs unless they violated the basic objectives of the occupation as outlined in the Potsdam Declaration.

The first steps toward political reorientation were the lifting of restrictions on freedom of thought, religion, assembly, speech and civil rights, and the liberation of political prisoners.

Japan's new constitution was promulgated on 3 November 1946. It transferred sovereignty to the people, giving them a Bill of Rights much like the one set forth at Philadelphia some 170 years earlier. Under the constitution the Emperor was retained as a limited monarch who participates in ceremonial functions of state but exercises no governmental authority.

Legislative power was vested in the Diet, with members of both houses elected by the people. Executive power was

vested in a cabinet collectively responsible to the Diet, with the prime minister named by the Diet from its members.

The third branch of the national government created by the constitution was a 15-member Supreme Court empowered to determine the constitutionality of any law, order, regulation or official act.

Although not entirely comprehending at the outset the significance of the sweeping changes, the Japanese people accepted their new responsibilities with gusto. In the first fully democratic election, less than a year after the war's end, 72 per cent of Japan's eligible voters cast ballots for members of the Diet's House of Representatives.

A year later, in the second general election, the effect of the occupation's decentralization program was seen. Under a new local autonomy law, elections were held for prefectural governors, city mayors, village headmen and assembly members. Nearly 2400 women ran for national and local office and more than 800 were elected, including 10 to the Diet's upper house. Women at last had a voice in governmental affairs.

SCAP's directive establishing civil liberties—issued a few weeks after the occupation began—was followed by instruc-

U. S. Army Photograph

A large housing project, part of Japan's building program, nears completion.

tions that labor unions be encouraged. The Diet passed a law guaranteeing workers the right to organize and bargain collectively. Unions were formed at an unprecedented rate. Labor organizations and their memberships jumped from five unions with 5300 members in October 1945 to 36,000 unions with nearly 7,000,000 members by the middle of 1949.

Meanwhile, business also was being decentralized. The Japanese economy before and during the war was dominated by the Zaibatsu—a few powerful families who controlled the major part of Japan's industry, mining, finance and commerce and, to a large extent, the livelihood of the Japanese people.

The Zaibatsu's stranglehold on economic enterprise had to be broken while foundations for a competitive, private enterprise economy were laid. Much of the stock of Zaibatsu companies and combines was sold to employees, local residents and the general public. Aside from the Zaibatsu, large holding companies, monopolistic trading combines and control associations, whose fingers reached into practically every area of business and industry, also were broken up.

Democratization of Japanese business in the cities was complemented in rural areas by a Land Reform Program that turned millions of tenant farmers into free landholders. Prior to the occupation 70 per cent of Japan's farmers rented all or part of their land and generally were required to pay in kind from 50 to 70 per cent of their gross farm output as rent. Since the occupation began, more than 4,500,000 acres involving 30,000,000 tracts have been bought by the government from former landowners for resale to the farmers.

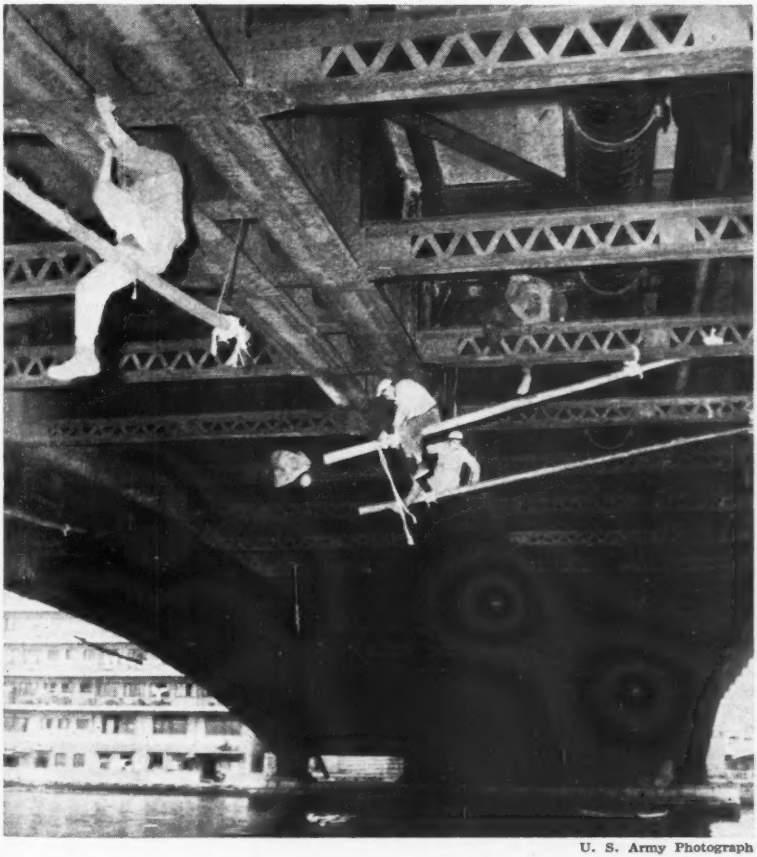
The formation of agricultural cooperatives free from domination by government or other outside control was encouraged. By mid-1949 a total of 31,329 local and individual co-ops had been organized.

Cooperatives also were established in the vital fisheries industry. The Japanese, probably to a greater extent than any other nation, have developed resources of the sea. Practically every species of sea animal and plant is used for human consumption or industrial purposes. Much of the fishing industry was under the control of fisheries associations dominated by the government and by local village bosses. Under the occupation, these associations were replaced by cooperatives operated through democratic procedures. By last fall 89 per cent of Japan's 3131 fishery associations were in process of dissolution and 811 cooperatives had been formed.

In 1948 the Japanese fishing fleet was restored to its pre-war level. By last year maritime production was approaching 7,000,000,000 pounds, the highest level since hostilities ended and considerably more than pre-war production from the same area.

Historically Japan has been a food deficit country. Through the use of all land resources, Japan held food imports in the past 20 years to an annual average of 3,000,000 tons. About 85 per cent of the country's food requirements came from indigenous production. With the end of the war, the Japanese food collection and distribution system faced total breakdown.

If disease and unrest were to be prevented, the occupation



U. S. Army Photograph

In the first year of Japanese occupation, construction laborers such as these were granted the right to organize and bargain collectively.

U. S. Army Photograph

For the instruction of midwives, a Red Cross hospital director demonstrates the type of physical examination given to maternity patients.

authorities had to obtain maximum production of food, provide an equitable distribution system for it and import the minimum quantities necessary to make up the food shortage. Rice collections from farmers had dropped to 19,000,000 koku* in the 1945-46 crop year, compared to about 36,000,000 during the war years. They were increased to 27,000,000 koku in 1946-47, 29,000,000 in 1947-48 and 31,000,000 in 1948-49.

Prior to the surrender, health and welfare activities that existed in Japan were primitive and inefficient. Public water and sewage systems, which existed only in the larger cities, had suffered severe damage. Environmental sanitation was virtually non-existent, presenting a threat of dysentery, typhoid and typhus epidemics.

Smallpox, which was becoming increasingly dangerous, has been practically eliminated as a major public health problem through vaccination of Japan's entire population. Typhus fever, endemic in Japan for years, has been dealt with through the vaccinating of nearly 9,000,000 people and the dusting of 48,000,000 with DDT. At least 34,000,000 persons were immun-

* One koku equals 4.95 bushels.

ized against cholera. Japan's diphtheria rate was reduced 83 per cent by instructing Japanese pharmaceutical plants on how to make the necessary toxoid and by immunizing several million school children. Improvement of sanitation and water supplies, the control of insects and rodents, and an immunization program brought decreases in dysentery and typhoid by more than 85 per cent.

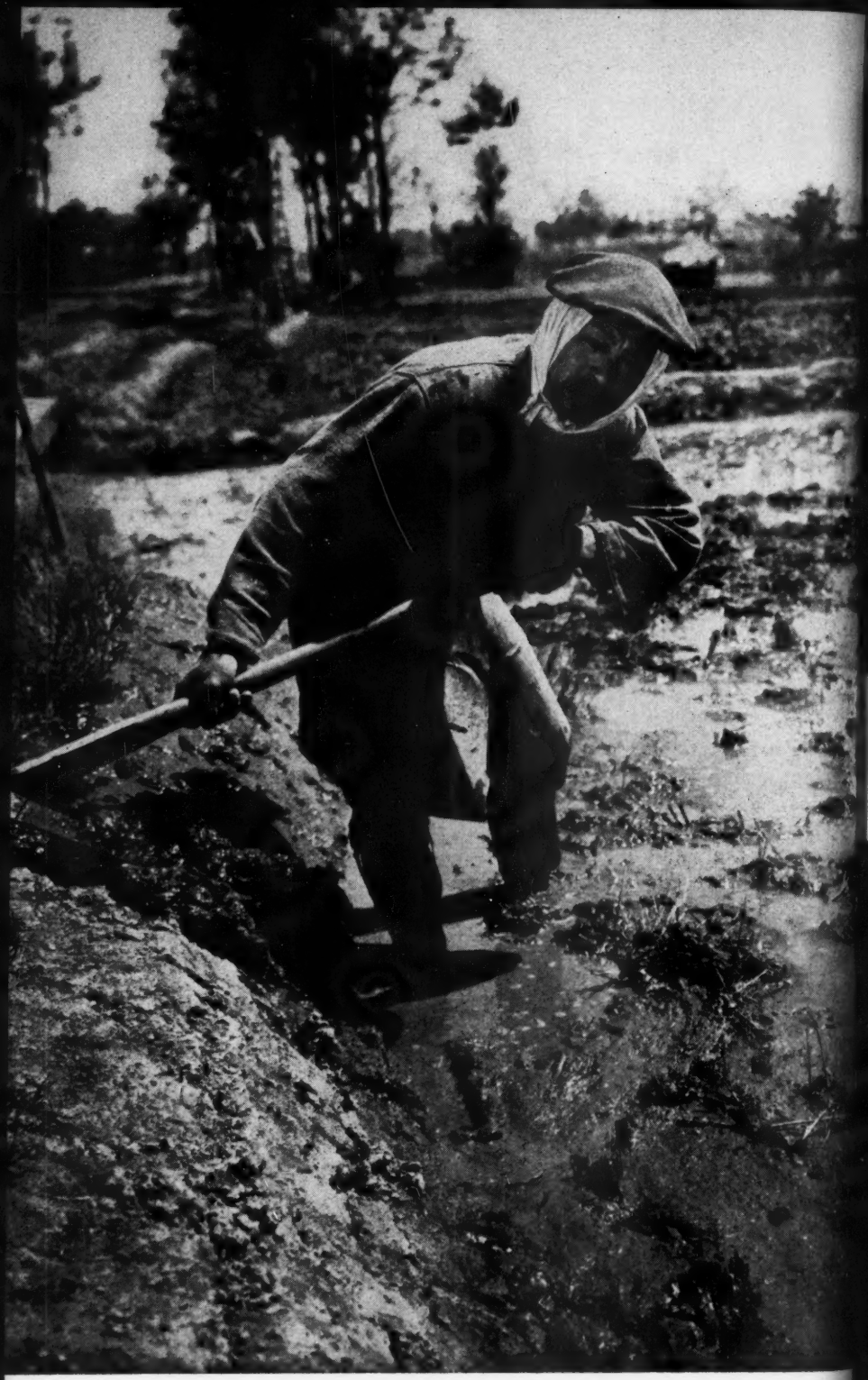
But the big health problem in Japan was tuberculosis, the leading cause of death since 1934. Japan's tubercular rate was one of the highest in the world. By the use of full publicity, mass examinations in factories and schools and the inoculating of millions, the death rate from tuberculosis was reduced from 280 per 100,000 annually in 1945 to 181 per 100,000 in 1948.

In the early stages of the occupation all foreign trade had been conducted between governments. In 1947, however, limited private export trade was begun and private traders were permitted to enter Japan. Since then constant simplification and normalization of trade procedures have been carried out in order to reestablish foreign trade on a free competitive basis.

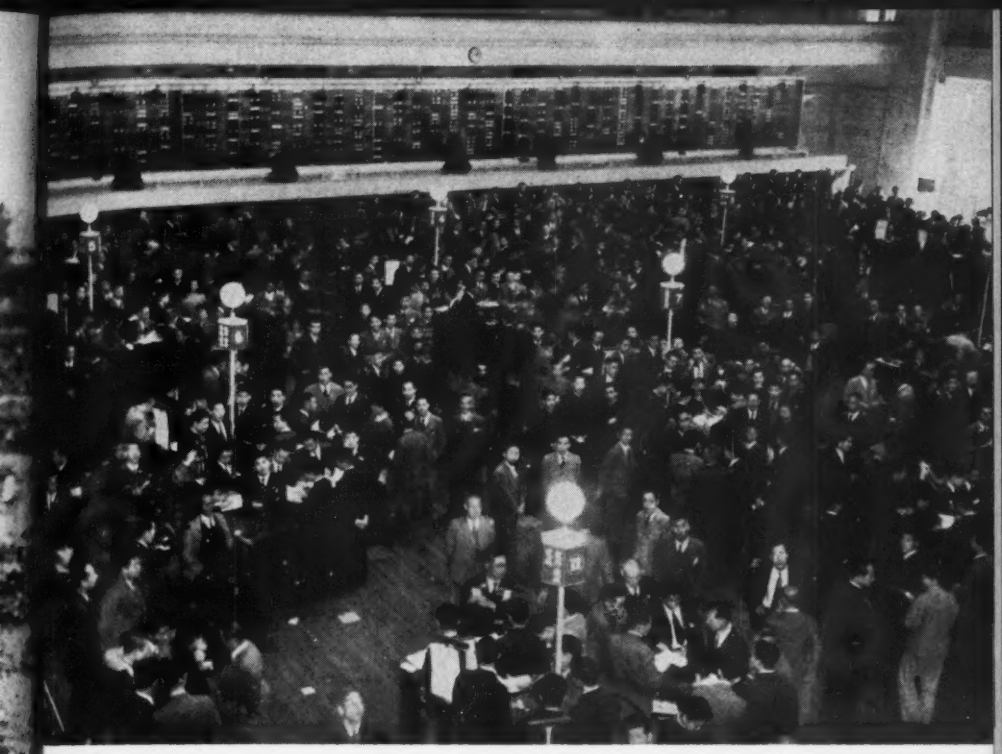
Progress toward economic rehabilitation is reflected in the fact that industrial production, which gained 30 per cent from July 1948 to July 1949, continued its upward trend. Production rates in coal, utilities and other basic industries have approached and in some cases surpassed pre-war levels.

Consumer goods in vastly increased quantities are available to the Japanese people. Economic controls through rationing, price ceilings and subsidies have been eliminated on numerous items. In an important relaxation of controls, export trade was returned to a private basis on 1 December 1949 and import trade a month later. In both of these instances, the government retained only such controls as were necessary to safeguard Japan's foreign exchange position, the stability of her currency and the equitable distribution of scarce essential commodities.

The progress achieved in five years of occupation has vital significance for the free nations of the world today. Against the backdrop of battle in Korea, the economic revitalization of Japan and its stability and reorientation along democratic lines are among the unseen factors helping to smooth our path to victory over the forces of aggression.



A farmer builds up the mud levee around his paddy field. Under Japan's land reform program, millions of farmers are now free landholders.



Trading at the Tokyo Stock Exchange (above) reflects Japan's rising level of economic activity. The night scene (below) shows a portion of the capital city's modern metropolitan area.

Women gained social and economic equality under the revised civil code. Above, Japanese girls operate modern business machines in SCAP's Economic and Scientific Section. Below, the first woman in Japan to attain the position of judge receives her credentials.

Boys and girls (above) attend the same elementary school and study from new textbooks. Below, a first-grader thanks members of SCAP's Public Health and Welfare Section for the nutritious hot lunches provided for pupils.

All photographs in this section by U. S. Army.

Japan's reformation program includes both building and rebuilding projects. Here workmen construct a tramway bed.

Japan's fisheries, operated by newly formed cooperatives, are achieving pre-war levels of production. Fully stocked fruit stands (below) reflect the country's steadily increasing food supply.

TACTICAL USE OF GUIDED MISSILES

By

CAPTAIN NELS A. PARSON, JR.

IF THE Battle of the Bulge had occurred in 1954, ten years later than it did, would the record of the historians, taking into account the latest developments in guided missiles, read something like this?—

"On 16 December 1954 the enemy Fifth and Sixth Panzer Armies and the Seventh Army attacked in great strength in the Ardennes region. By the end of December these units had penetrated as far west as the Meuse River and were preparing to cross that river in the vicinity of Namur. Adverse weather conditions deprived our forces of air support. A crossing at Namur and the subsequent capture of Liege and Antwerp by the enemy was a distinct possibility. Our only hope lay in preventing the arrival of fresh enemy reserves and equipment for the new battle developing along the Meuse.

"All guided missile battalions along the entire battle front were committed to this defensive mission. Seven battalions with missiles of 150-mile range and two battalions with the new 500-mile missiles were attached to the defending armies.

"Initially all major bridges crossing the Rhine River, upon which the enemy was largely dependent for logistical support, were destroyed by guided missiles. Then communication centers, supply dumps and major troop concentrations became the targets. Without warning to the enemy, fifty tons of high explosive warheads would strike a target simultaneously.

"The effect was devastating. Enemy reserves could reach the front only by marching on foot and their supply system was severely disrupted. When our counterattacks began, the enemy realized that his position had become precarious and attempted to withdraw again to the Siegfried Line but once again his mobility was restricted by guided missile fire.

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"When the weather cleared sufficiently for major air operations, the hostile air force was dispatched at once in great strength to silence our guided missile fire. Our air defense system met the attack with interceptor aircraft, antiaircraft guided missiles and artillery. Enemy aircraft losses were so great that their mission had to be abandoned. Meanwhile, the enemy ground forces, defeated and exhausted, were compelled to retire to the Siegfried Line."

Is this account of a hypothetical battle merely sensationalism or a realistic picture of what could happen? Will guided missiles have such an influence on warfare of the not-too-distant future?

The answers to these and related questions are the primary concern of student officers at the Guided Missile School, Fort Bliss, Texas. Here officers of the Army, Navy, Air Force and Marine Corps study the newly developed tactics and techniques of employment of this radically new weapon.

Generally speaking, a guided missile is an unmanned weapon that can be directed to the target by commands originating from outside it or by instruments built into it. Guided missiles are classified according to launching location and target location. An antiaircraft guided missile, for example, is known as a surface-to-air missile. Likewise there are surface-to-surface, air-to-surface, and air-to-air missiles. The ground forces of the Army are particularly concerned with surface-to-air and surface-to-surface missiles which are essentially extensions of the conventional artillery weapons.

Surface-to-Air Missiles (SAM): Because of the great speed, maneuverability and an ever-increasing flight ceiling of modern aircraft, antiaircraft artillery by itself can no longer provide an adequate defense against air attack. Even if the range of antiaircraft guns were increased, the relatively long time of flight of the shell would permit aircraft to maneuver away from the predicted point of interception. Moreover, future aircraft will be able to launch powered guided bombs (air-to-surface missiles) at great distances from the target. The use of interceptor aircraft to destroy high altitude bombers is likewise only partially effective. Fighter planes are losing the speed advantage they once had and are also vulnerable to defensive fire from the bombers. A more certain method of attacking the modern bomber is to fire at it a missile which not only has great speed and range but also the ability to change its course, thus over-

coming any feint or evasive action of the target. This weapon is the surface-to-air guided missile.

For an effective defense, antiaircraft guns, interceptor planes and guided missiles must be coordinated by a single agency in a highly centralized air defense organization. An early warning and target identification system capable of great range and almost completely automatic operation would be essential. The SAM would be integrated into this air defense team to supplement antiaircraft artillery and interceptor aircraft. It would be used, for example, in attacking enemy planes operating beyond antiaircraft artillery range that break through our interceptor defense.

Surface-to-air missiles are propelled by either rocket motors or atmospheric jet motors. In general, rocket propulsion systems are preferable for shorter-range missiles, and jet motors (combining atmospheric oxygen with missile fuel) are more desirable for longer-range missiles. These weapons intercept their targets either by following a radar beam to the target or responding to radio signals from the ground. Compared to conventional antiaircraft guns, the SAM is characterized by a large warhead and a high probability of destroying the target with a single round. With this type weapon, the proper location of launching sites in relation to areas to be defended is a critical factor in assuring an appropriate volume of fire with a minimum of materiel.

Surface-to-Surface Missiles (SSM): The Army is especially concerned with the tactical employment of the surface-to-surface missile in support of ground operations. Increasingly, as weapons improve, important tactical targets are progressively moving farther from the front. Originally the "dividing line" between tactical and strategic targets was considered to be that line on the battlefield beyond which an activity normally had no immediate or direct bearing on the battle. Today, however, many targets once considered strategic because of their distance behind the enemy lines are now actually tactical, especially since enemy reserves of troops and materiel can be held further and further to the rear without losing their capabilities of arriving on the scene at the critical moment. Thus the question might be raised: If troops or materiel that can be moved into battle within a few days are tactical targets, is not an airborne division assembling a thousand miles away for a combat mission a tactical target?

Against what targets, then, would SSMs be used? These

guided missiles are not needed for some important new target but for attacking existing targets under special circumstances which make their use more profitable than that of artillery or aircraft.

As the speed and mobility of military forces have increased, the need for effective long-range artillery has become more urgent. Range is the most important limiting factor in conventional artillery. The only answer to this problem is increased muzzle velocity which is always accompanied by greatly increased size and weight of the gun. Conventional artillery as we know it or with foreseeable improvements cannot be considered a practical mobile support weapon at ranges greater than fifteen or twenty miles. The SSM is needed, then, to provide demolition fire against heavily protected targets within artillery range and to reach vital tactical targets beyond the range of guns.

Aircraft, of course, can also attack such targets but this tactical air support is dependent on favorable weather conditions. Two other factors can also limit air support—namely, the enemy's local air superiority and his effective antiaircraft defense of critical targets. These three factors, of which weather is the most unpredictable and about which the least can be done, make it impossible for tactical air to guarantee fire support to ground forces at the time it may be needed the most.

The surface-to-surface guided missile, on the other hand, furnishes the ground commander with a means of attacking targets at times and locations beyond the capabilities of ordinary artillery and tactical aircraft. Lives are not risked as when aircraft are used and little or no advance warning is given the enemy. Under any conditions the enemy can take but little active counter-action against the supersonic SSM. He can only disperse his installations, which is a handicap to him.

The SSM is not without disadvantages. Of foremost concern is the present limited accuracy of the weapon. A circular probable error of about four per cent of the range was obtained by the Germans with the V-2 rocket, but it is certain that this limited accuracy will be improved. Due to construction costs and the supply problem involved, the number of missiles available for firing will always be limited. A fueled SSM ready to fire may weigh up to ten times the weight of its own warhead. This means that for every ton of high explosive delivered to the enemy up to ten tons of materiel must be

shipped to the launching area. Accurate target location and reliable damage analysis of the target will sometimes be difficult to obtain. Missiles on the ground, like aircraft, are extremely vulnerable. Another limiting factor in the employment of SSMs is the need for highly skilled technicians to handle and fire them. (See "Training for Guided Missile Warfare," July 1950 DIGEST.)

There are two basic types of surface-to-surface missiles. Both are propelled by jet motors. The first is the rocket, which carries its own fuel and oxidizer, is not limited to the atmosphere, is supersonic and has a trajectory parabolic in shape. The German V-2 is an example of this type. The other is the winged missile which carries its fuel but uses atmospheric oxygen for burning the fuel. The German V-1 (Buzz Bomb) is an example of this type. The atmospheric-jet missile is limited to flight in the atmosphere, is generally slower than the rocket and is more vulnerable to enemy counter-measures. On the other hand, since it resembles aircraft in many respects, conventional airframes, propulsion systems and fuels may be used in construction of the missile. This is an important advantage of the atmospheric-jet missile. At present the V-2 type rocket is generally considered the better missile for supporting ground operations up to a range of about 150 miles.

Since the accuracy of the SSM is limited, two restrictions are automatically placed on the selection of suitable targets—they must be area targets, and they must be of unusual importance. Targets that may be considered appropriate for SSM attack include railroad yards, ports, beachheads, large supply depots, important command centers, tactical air fields, major troop concentrations and strategic targets such as key industries, raw material concentrations, dams, power sources and the like. The SSM will serve a double-barreled purpose if, by neutralizing such targets, it also contributes to the isolation of the battlefield.

The SSM must have sufficient range to attack targets the existence of which may have immediate or direct effect upon the employment of friendly troops. No specific distance can satisfy such a requirement. Therefore a family of missiles is needed beginning at the maximum effective range of conventional artillery and extending without limit. Generally, however, missiles with ranges up to about 150 miles will probably be adequate for most tactical targets.

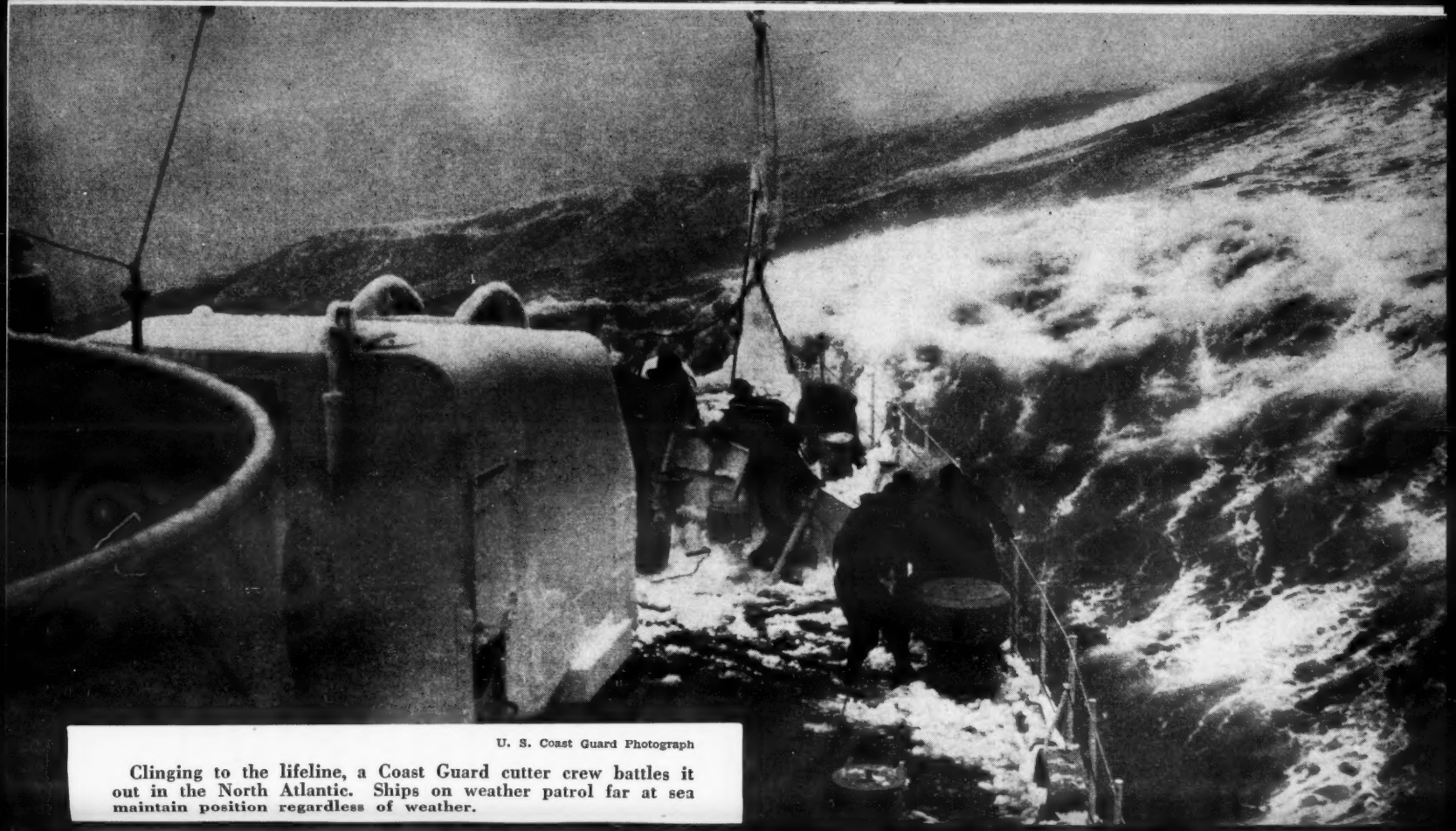
Good observation of the target area is essential to the suc-

cessful employment of SSMs. Although a large proportion of firing may be unobserved, damage analysis of targets must be obtained. Also new targets must be discovered and accurately located. Visual, photographic and radar reconnaissance must be utilized to the fullest extent. In addition to reconnaissance by piloted or pilotless planes, radar observation would be used to locate enemy guided missile launching sites.

Since guided missiles will normally be used to attack targets beyond the range of division and corps artillery, SSM units may reasonably be placed under control of the army artillery commander in general support of corps. The guided missile fire of two or more armies could also be massed on army group targets. Just as medium division artillery can be used on corps targets, in general support of the division or to reinforce the support of a regiment, SSM units at army level could be used on army group or theater targets in general support of the Army or to reinforce the support of a corps. Visualize, for example, the devastating effect of a dozen or more SSM battalions massing on a port area, beachhead or important rail center. With no more than a few seconds' long-range radar warning to the enemy, 50 to 100 tons of high explosives would strike the target simultaneously with accuracy and velocity not possible by any other means.

The innovation of guided missiles, however, does not mean that an era of pushbutton warfare is at hand. Guided missiles are supporting weapons with specialized missions. In anti-aircraft defense against the fast, modern, high altitude bomber, they fill the gap between interceptor planes and antiaircraft artillery. In ground operations their mere presence compels the enemy to disperse his installations with consequent strain on his communications and transport facilities. In action guided missiles extend the firepower of the ground commander deep into the enemy territory and guarantee him fire support when tactical air is unable to provide it.

In other words, guided missiles are most effectively used in joint employment with other weapons. They should not be considered separately. Whether or not they will develop into the "ultimate" weapon is a question only the future can answer. In the meantime the reinforcement they furnish other weapons more than justifies their development. The effort will be more than repaid if and when our efficient, target-seeking missiles destroy enemy atom bombers that may have broken through our interceptor screen.



U. S. Coast Guard Photograph

Clinging to the lifeline, a Coast Guard cutter crew battles it out in the North Atlantic. Ships on weather patrol far at sea maintain position regardless of weather.

THE COAST GUARD IN PEACE AND WAR

By

CAPTAIN SAMUEL F. GRAY, USCG

ON 13 June 1942, a Coast Guard sentry patrolling his post on the south shore of Long Island observed the landing of a group of German agents from a submarine and was the first to report their presence. His information led to their eventual capture and the execution of some of the group.

Not only on our home shores, but in every major theater of war from Guadalcanal to Normandy, the Coast Guard served alongside its sister services in World War II. Coast Guard action disposed of enemy submarines, took numerous enemy vessels into protective custody, imprisoned thousands of the enemy crewmen for acts of sabotage and operated transports for our own troops—all this while maintaining a vigilant watch to keep our ports secure and shipping lanes open.

The Coast Guard's outstanding war record is matched by its peacetime accomplishments in bringing a measure of security and safety to the ever-dangerous calling of those who follow the sea. The rescue of passengers and crews of foundering vessels, the locating and rescue of planes downed at sea, the evacuation of marooned residents from flooded areas—many such exploits recorded in the morning's headlines are all in the day's work for the far-ranging Coast Guard. When explosions devastated harbor facilities and left the Texas City, Texas, waterfront in ruins on 16 April 1947, Coast Guard units came to the rescue, saving life and protecting property. During the recent eruption of Mauna Loa volcano in Hawaii,

Clinging to the lifeline, a Coast Guard cutter crew battles it out in the North Atlantic. Ships on weather patrol far at sea maintain position regardless of weather.

CAPTAIN SAMUEL F. GRAY, USCG, is Chief, Public Information Division, Headquarters, United States Coast Guard.

many victims driven from their homes by the lava flow were rescued by Coast Guardsmen. These and numerous other tasks are performed by the Coast Guard for the safety of our coastlines and adjacent waters.

Since it was established in 1790, the Coast Guard has maintained a tradition of service to the Nation. Upon the recommendation of Alexander Hamilton, first Secretary of the Treasury, the Congress authorized the construction of "ten boats of from 36 to 40 feet keel and armed with swivels"—cannon that could be turned in any direction—as a means of intercepting contraband runners. In 1915 and by subsequent enactments, the Congress established the Coast Guard as a "military service and a branch of the armed forces of the United States at all times."

"The Coast Guard," it declared, "shall be a service in the Treasury Department, except when operating as a service in the Navy. Upon the declaration of war or when the President directs, the Coast Guard shall operate as a service in the Navy and shall so continue until the President, by Executive Order, transfers the Coast Guard back to the Treasury Department. While operating as a service in the Navy, the Coast Guard shall be subject to the orders of the Secretary of the Navy who may order changes in Coast Guard operations to render them uniform, to the extent he deems advisable, with Navy operations."

The mission of the United States Coast Guard is many fold. It enforces the law on the high seas and navigable waters of the United States; it promotes maritime safety; it holds itself in military readiness for national emergencies. It maintains a fleet of cutters and aircraft with bases distributed throughout the country and our outlying possessions. It operates aids to navigation—lighthouses, light-ships, loran stations, buoys, fog signals, radiobeacons, day-marks and the like. Among its more important maritime safety functions are search and rescue,* ocean weather patrol, ice patrol, ice breaking, patrolling regattas, the removal of floating derelicts and marine inspection. It also acts as a law enforcement agency for a number of Government departments and agencies that lack the necessary floating equipment. It enforces on the high seas and navigable waters of the United States various Federal laws, including the Load Line Act, Inland Rules of the Road, the Motorboat Act, Oil Pollution Act, anchorage laws, quarantine,

* See "To the Rescue," ARMY INFORMATION DIGEST, June 1948.

criminal, immigration, neutrality and revenue laws, the Submarine Cable Act, the Gold Embargo Act and laws and regulations dealing with the obstruction of navigable waters. It has jurisdiction in matters involving piracy and mutiny, smuggling, coastwise pilotage, transportation of dangerous cargo and prohibited articles. It enforces a number of conservation laws designed to preserve and protect halibut, seal, whales, sponges, migrating birds and Alaskan game and to prevent alien fishing in Alaska. It even protects the live oak timber preserves of the Nation.

The Commandant of the Coast Guard, a Vice Admiral, directs administrative affairs from headquarters in Washington, D. C. Organizationally, the Coast Guard is divided into twelve districts, each operating under a Coast Guard District Commander, who is under the supervision of the Commandant.

The Coast Guard personnel strength as of 30 April 1950 totaled approximately 23,000, comprising 2004 officers, 19,948 enlisted personnel, 824 chief warrant and warrant officers and 380 cadets. Officer designations follow those of the Navy but,

U. S. Coast Guard Photograph

Coast Guardsmen bring British seamen over the side after a lifeboat crew had rescued them from the North Atlantic.

because of the specialized work involved and the number of small units engaged in specific operations, there are proportionately more petty officers required than in the Navy. Pay scales parallel the Navy tables for comparable grades and ranks.

As of 30 April 1950, Coast Guard civilian employees totalled 4946, among them lighthouse keepers, light attendants, part-time lamplighters, departmental employees, wage board employees and personnel assigned to oversea possessions and eight foreign countries.

Reflecting the ever broadening scope of our national commitments, the Coast Guard through the years has been given added responsibilities. When the United States acquired Alaska from Russia by purchase in 1867, the cutter *Lincoln* was the first American vessel to arrive there. Coast Guard service has been closely identified with Alaska ever since, with the annual Bering Sea Patrol rendering assistance to the natives and protecting the sea herds and salmon fisheries. The International Ice Patrol was placed under the service in 1914 following the sinking of the *Titanic* by collision with an iceberg.

When World War I broke out, the Navy was augmented by fifteen Coast Guard cruising cutters. More than 200 commissioned and warrant officers and some 5000 enlisted men were transferred to the Navy, where they hunted submarines and raiders and guarded troop transports. Later, the experiment of prohibition added many problems to the Coast Guard work of preventing smuggling. Ice breaking was added to its duties in 1936. The Lighthouse Service became part of the Coast Guard on 1 July 1939. The following year the Coast Guard's Atlantic Weather Observation Service was organized with cutters patrolling mid-ocean weather stations.

During World War II Coast Guard cutters and Coast Guard-manned destroyer escorts sank 11 enemy submarines and its aircraft sank one. Coast Guard-manned Army and Navy transports, LSTs, LCIs and other craft helped land Army troops and Marines in every important invasion in the Pacific, North Africa, Italy and France. Coast Guard craft rescued 1658 survivors of enemy torpedoings along the Atlantic and Gulf coast. Other cutters saved 925 in the North Atlantic and Mediterranean and 1600 during the invasion of Normandy. Demobilized from its peak war strength of more than 171,000, the Coast Guard was returned to the Treasury 1 January 1946 as wartime port security ended.

Coast Guard personnel are procured through recruiting

channels, in the same manner as the other services. Minimum standards assure that only high quality men with a reasonably sound education are enlisted. Officers are trained at the Coast Guard Academy, New London, Connecticut, which had its inception in 1876 as a School of Instruction for the Revenue Cutter Service. The Academy today offers a four-year course to cadets selected by annual competitive examinations. The four-year course leads to a bachelor of science degree in engineering and a commission as ensign in the Coast Guard. This year the Academy produced 68 graduates. In addition, 44 officers completed postgraduate training courses at naval stations and civilian universities. An officer procurement program, inaugurated in 1949, authorizes the Coast Guard to select additional regular officers by competitive examination from licensed officers of the United States Merchant Marine.

U. S. Coast Guard Photograph

Since 1716 the Boston Lighthouse has stood as a sentinel of safety to ships along the New England coast. Among the newer aids employed by the Coast Guard is this helicopter, used for rescuing stranded survivors in isolated areas.

Members of the Women's Reserve—popularly known as SPARS—served with the Coast Guard in World War II until their organization was deactivated in July 1947. Reactivation of commissioned personnel was authorized in November 1949, and by March 1950, 215 women officers had signed for duty with the Women's Volunteer Reserve. Women with enlisted status in World War II are also being accepted in the Reserve. Two training groups are currently in existence in New York and California, and others are projected.

Looking toward wartime mobilization requirements, every effort is made to have Coast Guard personnel trained in Navy operating procedure and doctrine by assignment to Navy training schools and facilities. All Coast Guard aviators are Navy trained in courses paralleling those given to Navy pilots with the exception that Coast Guard fliers are not given training in carrier operations.

Enlisted personnel receive their basic training at the Coast Guard Receiving Center, Cape May, New Jersey, where 2135 men were trained during fiscal year 1950. Advanced enlisted training is given at the Coast Guard Training Station, Groton, Connecticut, and at Navy schools. During fiscal year 1950, specialized Coast Guard schools graduated 1484 advanced trainees, while Navy schools graduated 628. The Coast Guard also maintains the Coast Guard Institute at Groton, Connecticut, where 6637 students are currently enrolled in correspondence courses pertaining to their rates.

The Army career management program has its counterpart in the Coast Guard. Currently, the Coast Guard is instituting a comprehensive analysis of its billet structure. Out of this program of job analysis, defining of job specifications, and job evaluation will emerge a systematic career pattern of related jobs that will chart the path of professional advancement for both officers and enlisted personnel. In the event of a national emergency, these careerists would form the nucleus for an expanded Coast Guard in Navy service.

The transition from peace to war, and back again, is a pattern to which the Coast Guard and its predecessor, the Revenue Marine, have long been accustomed. Essentially a peacetime maritime police force maintaining law and order and safety at sea, the Coast Guard carries on its ensign the proud watchword, "Semper Paratus," denoting its readiness for service in any national emergency as well.

THE SERVICE ACADEMY BOARD RECOMMENDS --

By

JOHN L. HOEN

THE Service Academy Board, appointed by Secretary of Defense Johnson to study "the manner in which officer candidates should receive their basic education for a career in the armed services," reported its findings and recommendations to the Secretary in February 1950. On 14 July the Secretary of Defense approved an amended report of the Board and directed the Army, Navy and Air Force Departments to take steps to put into effect those recommendations designed to improve instruction at the Academies.

Rejecting all suggestions that the basic structures of the United States Military and Naval Academies be changed, the Service Academy Board recommended that the Academies' integrity and service identity be maintained and that an Air Force Academy be established to parallel the West Point and Annapolis schools.

In its wide ranging study, the Board analyzed the factors shaping the educational programs for future officers of the armed services. It considered the moral, mental and physical attributes which should be developed and the courses of instruction—both academic and military—that should be provided for the potential officers. It surveyed the manner of selecting officer candidates for training. It considered also the role and relationship of the Academies, the manner of training non-Academy officers in basic military education and the percentage of Academy graduates that would be desirable in the Regular officer corps of the Department of Defense.

"The American people," the Board pointed out, "have traditionally depended upon armed forces composed of citizens

JOHN L. HOEN, executive secretary of the Service Academy Board, previously served as executive secretary of the Advisory Commission on Service Pay.

as the final bulwark in any crisis threatening the existence of the Nation. They have insisted upon the maintenance in times of peace of armed forces trained to high professional standards and fully competent to train and condition the expanded forces of citizens required for war." At all times, therefore, there must be maintained a nucleus of Regular officers trained from youth in the principles of leadership and in the art of war, and dedicated to a lifetime of service to the Nation. "Our service Academies have long been recognized as a means of accomplishing this purpose," the Board stated.

A substantial proportion of the officers of the Department of Defense should be educated in service Academies, the Board advised, for they set a special pattern for reaching and maintaining the highest professional standards. Not only is the service Academy unique among colleges in securing an early devotion to a military career; it also sets a bench mark of comparison that helps the Reserve Officers Training Corps program maintain its excellence.

Comprising a distinguished membership, the 10-man Board was headed by Dr. Robert L. Stearns, president of the University of Colorado, Chairman, and General Dwight D. Eisenhower, president of Columbia University, Vice Chairman.* The Board's report is based largely on the findings of advisory panels of civilian and military educational authorities in the fields of science and engineering, the social sciences, language and area studies, teaching and testing methods, physical education and military education.

As a result of its study, the Board recommended that the Army and Navy assist in the establishment of an Air Force Academy by voluntarily transferring Cadets and Midshipmen from their respective Academies in such numbers and from such classes as mutually agreed upon by the services. It was agreed that the program of instruction at the three schools should be undergraduate in character and that the four-year course should lead to a baccalaureate degree. It further recommended that in times of peace not less than fifty per cent

* Other members were Dr. James P. Baxter, III, president, Williams College; Dr. Frederick A. Middlebush, president, University of Missouri; Dr. George D. Stoddard, president, University of Illinois; Dr. Edward L. Moreland, executive vice president, Massachusetts Institute of Technology; Major General Bryant E. Moore, superintendent, United States Military Academy; Rear Admiral James A. Holloway, Jr., formerly superintendent, United States Naval Academy; Major General David M. Schlatter, USAF, commanding general, Research and Development Command; and John L. Hoen, executive secretary.

of the planned annual procurement of Regular officers for each service be Academy graduates.

After studying at first-hand the curricula, instruction systems and administration employed at the Academies, the Service Academy Board advised that, desirably, all Academies should begin the academic year at the same time in order to permit joint exercises during the summer training programs. Further, students would be grouped in sections according to their abilities so as to allow those with marked aptitudes to go beyond the minimum educational requirements for graduation.

As for instructional methods, the Board favors the continuation of the current system of recitation but believes that more lectures by the staff and visiting lecturers should supplement the day-to-day presentations by the students. To develop in the students a genuine understanding and inquisitiveness in the field of science, it recommended that more emphasis should be placed on individual problems calling for the exercise of initiative in their solution. (As clarified by the service Secretaries and approved by the Secretary of Defense, the Superintendent would retain sufficient latitude to make determinations in this regard.)

The Board recommended that continued emphasis be placed on physical development and the rating of all Academy students in military aptitude. It called for the reduction of overcrowding of facilities at the Military and Naval Academies. To improve the efficiency of the library systems, the Board recommended that the administration of all libraries at each school be centralized with all books being cataloged in each Academy's central library.

In selecting candidates for entrance, the Board favored the adoption of the Air Force Academy Planning Board study wherein not less than four nor more than ten candidates may be nominated for each vacancy from Congressional districts, states-at-large and the like. Selection would be on a competitive basis and, as approved by the Secretaries of the Departments, academic proficiency would be only one of a number of factors to be considered by the respective Academies in naming the best qualified from each source group. The age of entrants should be between the seventeenth and twenty-second birthdays. As recommended by the service Secretaries, educational requirements for admission would be adjusted to the curriculum of the particular Academy concerned. It was agreed that the educational requirements should not exceed the curric-

ula available in typical secondary schools. The pay and allowances of students in the three Academies would be the same.

The Service Academy Board believes that improvements can be made in the faculty systems of the Academies. It recommends that the Academies be permitted to appoint their department heads on a permanent basis, although this is not an absolute requirement. All three Academies would be privileged to appoint civilian instructors and professors unrestricted by Civil Service procedures, in the same manner as that practiced by the Naval Academy. Permissive authority also would be granted to all the services to commission permanent professors, thus making available career teachers not subject to the usual rotation of duty. The Superintendents will continue to have high priority in the selection of faculty members from the regular services. Faculty members will be encouraged to participate in learned societies and a system of exchange professorships with civilian educational institutions would be developed. Faculty members will enjoy the privilege of sabbatical or other leave with pay for purposes of study—a practice normally followed by most leading civilian educational institutions.

The Board advocates that consideration be given to supplementing the education—subject to the needs of the particular service—through further training at civilian institutions of those Academy graduates scheduled to become members of one of the Academy faculties. It recommended that men with degrees from other institutions be placed on the faculties. Also, the faculties of each Academy should include officers of the other two services. Although not an absolute requirement, officers detailed for faculty duty would report three months prior to the beginning of the academic year for orientation before assuming instructional duties.

As for the Reserve Officers Training program, the Board recommended continuation of the three separate ROTC programs for the Army, Navy and Air Force. The purpose of the ROTC program, the Board advised, should be to provide each service with the necessary number of officers for its reserve forces and to provide Reserve officers for active duty and Regular officers to supplement Academy graduates.

The service Secretaries did not concur in the Board's recommendations in respect to dividing ROTC students into two categories. Instead, it was the joint opinion of the Secretaries

that proposed ROTC legislation is preferred to that contained in the Service Academy Board recommendations. This legislation would provide a modified Holloway plan* for all three services as well as continuing with modifications the existing ROTC programs, as developed by the three services in consultation with the Civilian Components Policy Board. In nonconcurring, the Secretaries pointed out that the legislation currently under consideration in the Office of the Secretary of Defense should be supported by the three services and the Department of Defense.

The Board believes that the three services—according to their individual needs—should give careful consideration to the establishment of a central agency within each service to deal directly with all ROTC units, thus adding to the administrative efficiency of each ROTC program. In addition, it advised that a greater latitude be given the Professors of Military, Naval and Air Sciences in working out various problems in conjunction with local college authorities. In times of emergency ROTC students should be given specialist training to insure their immediate availability in specialized assignments upon graduation.

Stressing the need for cross-education and strengthening of Armed Forces unification, the Board stated that teamwork is one of the primary objectives of military education. Concepts of unification must be taught from the first day a man enters the service Academy and continue with him until he retires. In this regard, the Board reported that it has found no evidence of a spirit of inter-service friction and jealousy among students or instructors in either Academy.

To further the spirit of unification, the Board recommended that the course of instruction at each of the Academies be designed not only to equip the student for a career in his chosen service but also to familiarize him with the concept of total defense and national security, with the interdependence of the land, sea and air forces, and with the foundations of our national life. The summer training programs should be so arranged that every student shall spend a minimum of six weeks during his four-year Academy course in joint training with corresponding groups from the other two Academies.

* The Holloway plan, as operated by the Navy, provides educational subsidies for students in the Naval Reserve Officers Training Corps. Students are obligated, when commissioned, to serve on active duty for varying lengths of time, according to the category of assistance received.

This training would include practice maneuvers employing the strategies, tactics and weapons of all three services. The system of exchange visits by groups of students would be continued.

The Board recommended that a consulting board be established in the Defense Department to report on the programs of the Academies and to continue the study of educational requirements of the services. However, the Departmental Secretaries decided that, in lieu of this board, an academic council should be established to be composed of the Academic Boards of the Academies. This Academic Council would plan and recommend coordinated instruction and balanced indoctrination in the concepts and roles of the components of an integrated defense establishment.

It also was recommended that, before being commissioned, an officer candidate be permitted to request a commission in whatever service he chose and that officers of any length of service be permitted to transfer to other services. This recommendation was approved with the understanding that the Secretaries of the services concerned must concur in each instance.

Finally, the Board recommended that the Joint Chiefs of Staff undertake a study of the practicability of introducing into the system of joint education an additional step between the Academy level and the first joint schools conducted by the Armed Forces for its officers. The recommendation was accepted by the Secretaries with the understanding that Academy graduates must have gained essential background and experience in their own service before receiving such additional joint schooling.

AID

GERMANY BUILDS FOR ITS FUTURE

By

MAJOR GENERAL RALPH J. CANINE

FORTY-TWO hundred additional living quarters for American families in Germany by the spring of 1951 is the goal of a giant construction program now under way in the European Command. Upon its completion, the housing shortage that long has plagued EUCOM personnel should be eased.

U. S. Army Photograph

MAJOR GEN. RALPH J. CANINE

This housing program, coupled with the construction of thousands of units by the Germans for their own use, is a potent factor in the regrowth of Germany's war-ravaged economy. The German construction industry again is humming with activity—this time devoted to peaceful ends.

Not only are a substantial number of German workers being employed under the program, but the projects also represent a long stride forward in eventually easing the civilian housing shortage created by the war. What is more important, from the German point of view, is the fact that although these homes are being built for initial use by the United States Army and Air Force, they ultimately will revert to a reconstituted, free Germany.

In size the units range from a single person's quarters to an apartment suitable for a large family. Construction of 1264 units begun late in 1949 has been completed and 960 more started in April 1950 are well on the way to completion.

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In addition to this new construction, a number of housing units are being obtained by converting or rehabilitating *kasernes,* former displaced persons camps and war-damaged houses and hotels.

The most extensive Air Force housing developments include one under construction near the Rhine-Main Air Force Base, others at Wiesbaden and at Mainz-Kastel, both of which are near USAFE Headquarters. Another large project at Munich, although not sponsored by the Air Force, is occupied by Air Force families.

Criteria for all plans were drawn by EUCOM Army Engineers, based on American requirements and designed by German architects as directed by EUCOM Headquarters. A majority of the buildings are of the three-story type, each divided into 12 apartments. The buildings constructed at Rhine-Main Air Force Base will have 56 apartments in each unit. All have central heating plants, basements, attics and children's play areas. Many have basement laundry rooms and a few have garages. Average floor space for a two-bedroom apartment is 1128 square feet; the three-bedroom units contain 1429 square feet. In selecting the housing sites, particular attention was given to the convenience of location.

The Heidelberg project of 108 new apartments is now tenanted by American personnel on duty at EUCOM headquarters. Each apartment has a terrazzo and tile bathroom and kitchen, combination bathtub and shower, central heating and outside windows. The stucco apartments open on a central parkway and have service entrances in the rear.

American architectural influence is evident particularly in the kitchens where the sinks and stoves are installed so that working surfaces are 36 inches from the floor instead of the 30-inch height normally used in Germany. Also included are clothes closets not generally found in German houses. Further American architectural influence is evident in the structures. Contrasting with the conventional five or six-story tenement type of apartment dwellings heretofore built in Germany, the new units are generally of the three-story type, with ample provision for fresh air, sunlight and play areas.

German construction firms erect the new apartment blocks and handle all repair and renovation work. In case a building project is too extensive to be handled alone, several contractors may pool equipment in order to fulfill building agreements.

Actually, under occupation regulations, contracts cannot be

entered into by the occupying officials and German firms. Consequently, it is necessary for EUCOM authorities to make their building needs known through the German press or by direct notices to reliable builders. All firms are free to bid. The firms submit proposals to meet certain obligations in connection with the construction, indicating the cost in *deutschemarks*. After studying these proposals, a demand is then issued by occupation authorities requiring the firm to proceed with the construction. When the work is completed, the builder receives payment through the Office of Occupation Costs of the German government. No American funds are expended in the transaction.

In some instances the foregoing procedure has not been required because the local German governments have, on their own initiative, taken steps to build houses for occupancy by American personnel. A notable example is the construction of 476 apartments at Munich and 398 at Wiesbaden for Air Force use.

Heidelberg Military Post, site of EUCOM headquarters, is a typical example of the general improvement resulting from the new housing program. On 1 January 1950 a backlog of 300 families of United States occupation forces was on the waiting list for quarters. Those families were forced to live in reception

U. S. Army Photograph

This 12-family apartment building in Heidelberg is one of nine already completed. Nineteen others are under way in an adjacent area.

areas and dependents' hotels while waiting for openings, and in most cases their sponsors were staying in bachelor quarters.

The Heidelberg Military Post Accommodations Office, staffed by 23 Americans and 2000 Germans, is responsible for providing housing service for all United States and Allied personnel in the Heidelberg Military Post area, including some 1600 dependents. To accomplish this mission, the office operates 25 hotels, 16 large bachelor officer quarters and 24 small bachelor officer quarters—all in addition to the family units. It also provides billets for a daily average of 160 transients passing through the Headquarters city.

Due largely to the new construction completed in the vicinity, the office had been able to reduce the 300-family backlog to approximately 100 by mid-spring. With additional apartments becoming available, the waiting list in the Heidelberg area should be reduced to the vanishing point by fall.

Prior to the recent suspension of travel to EUCOM, families arriving at Bremerhaven with their sponsors were sent to various communities in the United States Zone only when it was certain that housing would be available within a reasonable length of time. In Heidelberg, the personnel office received the transport passenger lists from the port and checked off families for travel to the city only after the housing office had indicated its capacity to accommodate them. The families were initially billeted in a special dependents hotel in Mannheim which was suitable for families having children three years of age or older. If the children were younger, their families were not brought into the Heidelberg area until it was possible for them to go directly to their new homes.

The EUCOM building program has been a boon to occupation personnel as well as to the German populace. American families of European Command personnel are benefiting by being able to obtain adequate housing—and this enhances efficiency and morale. The mass employment provided for German workers throughout the United States Zone and the boom experienced by building material and construction concerns have helped to strengthen the local economy. Areas in some cities have been brightened by the appearance of blocks of modern homes to replace the rubble left by the war. Through the foresight of EUCOM officials and with the cooperation of the German people, a lasting contribution is being made to the economic rehabilitation of Germany, enabling that country more quickly to restore itself in the world family of nations.

ADVANCES IN AVIATION MEDICINE

By

TECHNICAL SERGEANT WAYNE L. WOODS

WITH the advance of aviation into areas heretofore unexplored, scientists and researchers at the Air Force School of Aviation Medicine, Randolph Air Force Base, Texas, are engaged in an ambitious program of laboratory study to predict the effects of such air progress on the minds and bodies of airmen. In full-time research on 72 different projects, new global concepts are being applied in the medical sphere. The physiological effects of sub-zero temperatures, extremely high altitudes, supersonic speeds, sound and vibration, and sudden accelerations and decelerations are among the problems being investigated.

A branch of the Air University, and operative since 1918, the USAF School of Aviation Medicine (SAM) has two principal missions—that of conducting research into the psychological and biological changes which take place in humans exposed to elements foreign to their normal habitats, and the instruction of medical personnel in the prevention and cure of ailments peculiar to those who fly.

In the instructional field, a varied number of courses are given. Medical corps officers are trained as flight surgeons or as aviation medical examiners; courses are also scheduled in aviation physiology, aviation psychology and irradiation. An air evacuation course is conducted for flight nurses. Enlisted personnel may receive training as basic medical corpsmen, flight surgeons' assistants, air evacuation technicians or high altitude chamber operators. At present, the school conducts about two classes a year for aviation medical examiners,

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two or three yearly for flight nurses, and continual courses starting every few weeks for enlisted personnel.

In the school's far reaching research program, the possibility of travel through inter-planetary space is not regarded as a mere phantom of the comic-strip artist's imagination. Current rocket development indicates the possibility of flight beyond the stratosphere in the foreseeable future. The aeromedical problems associated with such flight range from how to live under conditions of zero gravity and extreme acceleration to the possibility of collision with meteorites.

Happily, some of the answers to the problems of maintaining life in outer space are known from current experience with pressurized aircraft cabins, submarines and diving equipment. The principles employed in acclimatization and elimination of expired carbon dioxide, water vapors and body wastes can be adapted to space ships. Nor is oxygen for breathing a real problem, after years of experience in its use and storage.

Effects of reduced gravity, however, constitute one of the greater problems. Under normal circumstances, a human being's muscular strength and nervous system are adapted to gravitational pull. But in space there is no weight and therefore no response to gravity. The researchers are thus confronted with one of their major problems. Since every movement and every sense of the human body is governed by weight, how will the sense of coordination work where no weight exists? What strain on the mind might arise when the human nervous system is forced to function out of its element? For example, with no upside-down in space, the eyes alone must control movement. The human body would float through space; therefore movements as in swimming would have to be used for locomotion. For quick individual travel, it has been suggested, a belt containing compressed air might be used. When rapid acceleration is desired, a valve on the belt might be opened, and swoosh, you're on your way. But then another problem arises—how to stop. Since there is no weight in the almost perfect vacuum that exists in space, a body propelled through space might never stop unless another belt control were added to slow and stop movement.

In space, less energy would be expended and therefore less food intake would be necessary. But how can one get food down and keep it there? Since much of the operation of swallowing food is accomplished with the aid of gravity, how will a person swallow without the aid of normal gravitational pull?

A suggested answer—probably through tubes from air tight pressurized containers or possibly by using condensed food capsules.

In other experiments at the school, the effects of explosive decompression are being studied. In modern aircraft with pressurized cockpits pilots are kept at a simulated altitude of about 10,000 feet even though the plane may actually be flying at 50,000 feet. In case the cabin is punctured by gunfire or collision, the atmospheric conditions change in a split second from that of low level to the rarer high altitude air. Experiments duplicating this change by using a rubber doll in a model aircraft showed immediate bodily expansion to almost six times normal size. Although the rubber probably stretched more in proportion than would human organs, such rapid expansion to even three or four times normal would in effect explode the inner organs. Methods of protection against this specific hazard are being studied in the SAM laboratories.

Department of Defense Photograph

A transparent plastic altitude chamber containing a model aircraft and a small rubber doll helps demonstrate explosive decompression. Puncturing the cockpit causes the doll to expand to six times its normal size.

Ingenious devices designed by the SAM Department of Psychology may in time be used to test the ability of aviation cadets to fly under any circumstances. Among the devices developed is a writing machine which records on a curve the pressures exerted between the fingers and on the pen point during writing exercises. This curve is then correlated with other data such as writing time, maximum and minimum forces exerted, flow fluctation and the ratio of grip and point forces. An evaluation of the curve, along with other data, is designed to assist the flight surgeon in estimating the potential ability of a cadet to fly.

Another gadget, fashioned after the pinball machine in the corner drug store, is used to record frustration complexes of the subject. The psychologist sits opposite the subject and steadies the machine, at the same time surreptitiously keeping his finger near a button which, when pushed, sets up a magnetic field near the scoring hole. The unsuspecting subject plays the machine much as any other of the pinball type, except that the handle of the gadget is wired to measure the pressures exerted between the fingers and the strength with which the triggering device is pulled. Occasionally during the test the psychologist pushes the button setting up a magnetic field around the target hole and, presto, the testee scores. Thinking he has the right range and windage he shoots again. But a near miss is counted. On the next shot, the man being tested is allowed to score again. This could go on forever but doesn't—as anyone who fails to evidence frustration after a reasonable time just isn't a seasoned pinball fiend. And no tilting is allowed.

Until a few years ago, experienced pilots were grounded for deafness because of failure to pass routine hearing tests. Many of these capable airmen were consigned to permanent ground duty despite the fact that they seemed to have no difficulty hearing sounds in flight. Researchers at SAM conducted experiments in this phenomenon. Recalling that the man who works in a boiler factory or newspaper press room often has difficulty in hearing outside of his work area and yet can hear the normal voice or slightest sound over the clatter of machinery, scientists thought the same might hold true of pilots. Extensive research proved conclusively that, although the roar of engines in flight does cause a form of deafness at low noise levels, pilots actually can hear sounds amid thunderous noises that they could not detect under relatively quiet conditions.

As a result, many highly qualified airmen are retained on flying duty who formerly would have been eliminated.

Often a pilot must land with the aid of colored lights or pick up a ground signal through the haze with but little time to identify the exact color. His accuracy of color perception, therefore, is of prime importance in averting accidents. To detect those applicants for cadet training who are either totally or partially color blind, the school has developed and placed in use a relatively new idea in testing devices, the color threshold meter. With its aid, the flight surgeon is now able to determine the faintest hue of any basic color which a human is capable of seeing. Faint colors are made to appear and change while the subject gazes into the eye piece. The accuracy with which he identifies the colors indicates his ability to recognize color changes immediately, even though he sees them only momentarily or faintly.

Experiments in the relief of air and sea sickness, long the scourge of the traveler, have been under way for many months. A giant swing is used at the school to test the effects on Air Force personnel of various seasick remedies in an attempt to find one that will not slow the reactions of either the mind or body. It is evident that any drug which retards the physical or mental processes could never be prescribed for use by an aircraft pilot. In experiments, more than 5000 persons have been tested in the giant swing and many more have been tossed about in an aircraft during turbulent weather. Testing has been carried on even in a troop transport, with as many as 400 to 600 soldiers participating in trials on each crossing of the North Atlantic. The combined results of these tests are expected to contribute substantially toward finding an air sickness preventive which can be safely administered to flying personnel.

Special items of equipment developed at the school for in-flight care of patients are now being used on a world-wide scale. Among these is a compactly designed flight surgeon's kit which consolidates many bags and boxes of medical equipment into a single container resembling a mechanic's tool box. Another compact unit, one designed for in-flight feeding of air evacuation patients, keeps foods at desired temperatures longer than any appliance heretofore used, enabling flight personnel to feed their patients palatable meals even on extended flights.

The SAM Air Evacuation Section not only designs new equip-

ment; members of its flight section are on constant alert for mercy mission calls in which their techniques can be brought into play. Portable respirators are always on hand for use of polio victims who must be evacuated for treatment. On recent missions, for example, two polio-stricken dependents were flown from Mexico City to the United States. Test flights by air evacuation personnel proved the feasibility of using

Department of Defense Photograph

Sub-zero weather manufactured in the arctic chamber at the School of Aviation Medicine sets the stage for skin temperature studies.

the airways in place of hospital trains for movement of the sick and injured—a procedure now adopted throughout the Armed Forces.

Research at the school even delves into the treatment of radiation sickness and methods for protection of persons working in contaminated areas. In a typical training session, an aircraft is deliberately contaminated, leaving it to the student to find the dangerous areas. By using a Geiger counter or an ion chamber, he determines how long it may be safe for a mechanic to work aboard the plane. By this training, most Air Force medical officers are being prepared to cope with the hazard of exposure to radioactive materials.

To solve the problems induced by frostbite, long a danger factor in northern travel, the school maintains an arctic test chamber where temperatures as low as 60 degrees below zero are produced. Here experiments are conducted on the relative dangers of exposure to freezing. Thermocoupling devices, attached to various areas of the subject's skin, are hooked up with galvanometers outside the chamber where the instruments are observed by technicians. The physiological effect of various types of foods and clothing are tested according to the rapidity with which the skin reaches near-dangerous temperatures.

In bailing-out at high altitude, an airman leaving the heated cabin of an aircraft flying at 50,000 feet might encounter a temperature difference of more than 100 degrees. How will the shock of such a precipitate change in temperature affect his nervous system? Will standard-type flying clothing keep him from freezing to death during his descent? Tests designed to answer these and other questions are currently being conduted in the climatic hangar at Eglin Air Force Base, Florida. Here volunteers from the school are exposed to bailout conditions, including temperature drops and winds of extreme velocity. Simultaneously extensive research on materiel and equipment is under way at the Aero Medical Laboratory at Wright-Patterson Air Force Base, Ohio. The answers thus being compiled will doubtless save the lives of future airmen through ever broadening knowledge of survival and rescue techniques.

A VETERAN LOOKS AT WEST POINT'S CHANGES

By

LIEUTENANT BOYD T. BASHORE

THERE have been some changes made.

In the April 1947 issue of the ARMY INFORMATION DIGEST, Major General Maxwell D. Taylor, then Superintendent of the United States Military Academy, stated, "As the era in which we are living is a time calling for a reappraisal of values in many fields, and because of unique obligations of the United States Military Academy to provide public servants capable of service both in peace and in war, we have felt deeply the urge for self-criticism and the re-evaluation of our educational plans."

General Taylor has also said, "I have no use for tradition unless it serves a purpose."

During my four years as a Cadet I have seen the effects of this new approach which has been evolving through the years. As part of an evolutionary process, there has been a constant sifting of the traditions, customs and educational policies of the past to evolve a new and better Military Academy. I think that most veterans who became Cadets after the maturing influence of war service will concur.

The Academy has not softened. Far from it. Those traditions and customs which develop trustworthiness, honor and a sense of duty have been retained. But those traditions and practices which served no purpose have been, or are being, discarded.

Plebe year, for instance, was and still is rugged. Starting

SECOND LIEUTENANT BOYD T. BASHORE, Inf, was a member of the 541st Parachute Infantry Regiment and a graduate of Infantry OCS. He resigned his commission in 1946 to enter West Point on a Presidential appointment and graduated with the Class of 1950. In Lieutenant Bashore's class were 235 ex-servicemen of the Army and Air Force, 54 Navy, 8 Marine Corps and 3 Coast Guard. Forty of the Cadets in his class surrendered their commissions to become Cadets.

913 strong my class was reduced to 670 Cadets by graduation time. Most of the casualties occurred during plebe year. The severe academic and disciplinary requirements quickly separated many of those who were unfit to continue the Academy course. Uncompromising standards of bearing, conduct and discipline are still demanded. They are still the heart of West Point training.

The means to an end, however, have changed. Plebe treatment is more mature. Purely hazing practices have been abolished, and only those customs which have practical value have been retained.

Even that most basic position of the plebe, the brace, has been modified. In the past the brace consisted of walking, standing and sitting at an exaggerated position of attention. For punishment a plebe was made to brace harder, straining until his veins stood out on his forehead and his muscles quivered from tension.

Although the current plebes will find it hard to believe, the main purpose of the brace is no longer to place a man on a torture rack minus the rack itself. Now the brace is little more than a means of correcting a new Cadet's posture deficiencies. In the dining hall, where plebes once braced with chins drawn in so hard they had difficulty swallowing, they now merely sit upright, eyes down on their plates and eat their meals. Bracing has "grown up."

When my class entered the Academy four years ago, we wasted hours memorizing long, tongue-twisting quotations. At best, these were mildly humorous. Otherwise they were useless. For instance, if we failed to grasp an upper classman's meaning we had to be ready with, "Sir, my cranium, consisting of Vermont marble, volcanic lava and African ivory, covered with a thick layer of case-hardened steel, forms an impenetrable barrier to all that seeks to impress itself upon the ashen tissues of my brain. Hence the effulgent and ostentatiously effervescent phrases just now directed and reiterated for my comprehension have failed to permeate the soniferous forces of my atrocious intelligence. In other words, sir, I am very, very dumb and I do not understand."

Most of those old quotations are gone. Plebes will still memorize but they will be learning the names of members of the President's cabinet, the number of Russia's combat divisions and important facts about the Nation, the Army and West Point instead of trivialities.

Replacing the old fashioned driving-hazing attitude of upper classmen toward plebes is the more practical leader-follower technique. Instead of treating new Cadets as a subhuman species the trend is toward leading them as soldiers and men. If nothing else, this new attitude will keep upper classmen from forming undesirable leadership habits. This leadership training for the upper classmen, moreover, is every bit as important as the follower training that the plebes are receiving.

Most of the treatment we received was, at worst, of a semi-hazing nature—a combination of training and hazing. A new Cadet who had trouble arranging his field equipment might be required to report frequently for inspection with full field pack, steel helmet, combat boots and rifle, ready to spend many imaginary weeks in the field. In the past, however, he might have been ordered to come around before reveille with a chair or mattress added to his pack until he learned how to put his equipment in order. Plebe requirements such as these were methods of putting a little humor into training —with leeway enough to take care of the plebe who needed special disciplinary attention.

They were certainly more to the point than other hazing practices of the past in which the plebe might be required to perform feats of physical endurance such as push-ups, or deep knee-bends with possibly a rifle placed across his outstretched arms just to make it more difficult. Through the vigilance of the new Department of Military Psychology such practices have been entirely stamped out.

The psychology department—a significant feature of the new West Point—provides today's Cadets with a knowledge of sound fundamentals in the handling of men. World War II proved definitely that leaders can be made—and need not necessarily be born. Basic principles can be taught. Although a man may not become an Eisenhower or a Patton without certain innate qualities, he will certainly be a better leader than otherwise if he has learned and applies proven fundamentals of the art.

Now the Department of Military Psychology will conduct specific leadership courses during the entire four years of Cadet training. The Class of 1951 will be the first to graduate with the full treatment—180 hours of training in leadership.

During World War II, Army and Marine Corps officer candidate schools introduced the system in which students rated each other as to leadership qualifications. West Point has

adopted the plan. Cadets rate one another. The principle that you can sometimes fool your superiors and subordinates but never your contemporaries will be applied.

While no definite conclusion about a man's future can be drawn from such a rating, men with inadequate ability will be exposed. Cadets who have displayed inadequate leadership are told about it and then helped by instructors. If they continue to fail in this essential military quality they will be dismissed from the Academy. Never before has the process of eliminating Cadets pointed so directly toward West Point's ultimate goal—to graduate only intelligent and well-rounded Army leaders.

A broad awareness of the roles of the sister services is now an established part of the curriculum. As juniors and seniors, we traveled to Army, Navy and Air Force installations for special training. In summer, Midshipmen and Cadets forgot their annual football rivalries and worked together on a cruise and amphibious landing problems. During the junior year, small groups from the two Academies traded places for a few days and lived the routines of the other school. (See "Cadets and Midshipmen Meet," April 1950 DIGEST.) These practical working relationships pay untold dividends by fostering a unified approach to service problems.

Traditionally, Cadets have never been permitted to drink liquor. Not only was the regulation difficult to enforce but it ignored an aspect of social life encountered in later years. New regulations permit Cadets to drink when twenty-five miles from the Academy. It is required, however, that they do so as gentlemen. The punishment for intoxication is as severe as ever.

Having any pocket money, even pennies, was a demerit offense four years ago. Today, however, Cadets may carry money. The tradition of trying to enforce social equality by economic embargo has been abandoned. Social equality among Cadets is a matter of mutual respect as among officers and gentlemen. The disadvantage of this new rule is, of course, that the gentler sex quickly found out about it and immediately discarded the time-honored custom of picking up the dinner checks.

The old leave policy has been liberalized. Now each class is given a month's vacation during the summer. This is still much less than other college students receive. Week-end passes are also issued more freely to the upper two classes.

Second classmen can have two week-end passes and first classmen are allowed twenty week-ends. Cadets may also ride in taxis on the reservation, make long distance telephone calls, send telegrams and wear civilian clothes on pass. First classmen may even own and drive cars—if they can afford it. These were forbidden in the past.

Academically West Point has broadened considerably. Courses cover a wide range, from psychology, nuclear physics, the Russian language, law, history and literature through college-level engineering and mathematics. My class spent hardly any more time on essentially military subjects during the academic year than do classes in any good college with ROTC. Nor did we specialize in any one branch of military science as ROTC students do. Our specialization comes after we graduate. The bulk of our military training came during the summers when there were no academic classes. The summer training, of course, raises the military proportion of the West Point curriculum to 40 per cent of the total. But academic instruction in the arts, sciences and humanities is not subordinated to the military.

That West Point's new academic concept is on a par with other colleges is shown by the results of an examination given graduates of West Point and forty liberal arts colleges. In this comprehensive test on eight subjects, two of which Cadets do not study (biological sciences and fine arts), the members of the Class of 1949 made higher averages than the norm for all other graduates in every subject except the two they did not study—and in those two they were average. Fifty-eight per cent of the Cadets were in the upper third while only eight per cent dropped into the lower third.

The purpose of West Point is to lay the foundations upon which a sound military career may be built, to instil the indispensable virtues of a soldier in every Cadet and to produce officers who will possess the same degree of intelligence and leadership as educated nonmilitary men with whom they will necessarily have contact both professionally and socially. In these and other respects, I think the Academy is accomplishing its mission.

For most men, the matter of learning is one of personal preference. But to Army officers, the obligation to learn, to grow in their profession, is clearly a public duty.

General Omar N. Bradley

ARMY LANDMARKS

Fort Lesley J. McNair

Fort Lesley J. McNair, home of the National War College and the Industrial College of the Armed Forces, is one of the oldest military sites in the country. Here, at the confluence of the Potomac and Anacostia Rivers in the District of Columbia, Major L'Enfant apparently intended that a fort should be constructed as part of his original plan for the Nation's Capital. On 29 June 1791 the first portion of the reservation was deeded to the United States and by 1794 there was a fort at "Turkey Buzzard"—the first recorded name. Since then, the site has had a variety of names, including Greenleaf Point, Washington Arsenal, Washington Barracks, Army War College (post) and Fort Humphreys. During the War of 1812 the British sustained losses there when a powder magazine blew up while they were burning the buildings. The Arsenal was rebuilt after 1812 and continued in use until 1881.

The post was then redesignated Washington Barracks and Artillery units were stationed there. During the Spanish-American War, the post hospital was converted to a general hospital that was moved farther north in 1908 to become Walter Reed General Hospital. Signal troops were trained at the post during the Spanish-American War. In 1901, the Engineer School (previously at Fort Totten) was installed here until it was relocated at Fort Belvoir in 1919.

The Army War College was opened in 1901 as an adjunct of the newly created General Staff. With the College initially engaged in General Staff work, it was not until 1904 that the first classes convened. Captain John J. Pershing was one of the students. The Army War College trained officers for highest level duty until 1946. Instruction was suspended during both World Wars, and the buildings were made available for high level staff activities.

In 1946 the unified National War College took over the facilities of the old Army War College. That same summer the Army Industrial College became the Industrial College of the Armed Forces and was installed at the same post. Both of these unified schools are under the direct jurisdiction of the Joint Chiefs of Staff. Both accept key civilians from other Government departments as students as well as personnel from all of the services.

The Fort received its present name in January 1948 in commemoration of Lieutenant General Lesley J. McNair, Commanding General, Army Ground Forces, who was killed in Normandy in World War II.

(Picture on back cover.)

FORT LESLEY J. McNAIR—AN AERIAL VIEW